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An Independent Illustrated Monthly Magazine Devoted to
The Interests of Pictorial and Scientific Photography.

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THE PHOTOGRAPHIC TIMES

Volume XXXIX. MAY, 1907. Number 5

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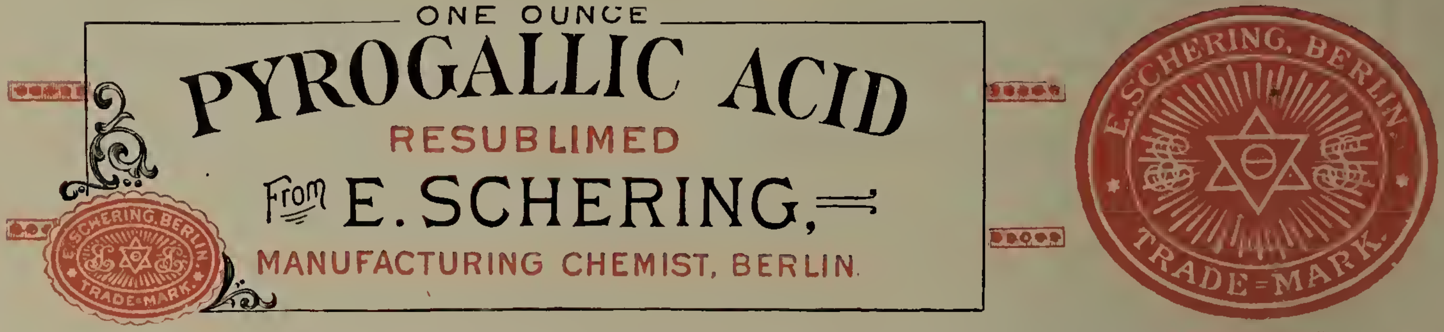

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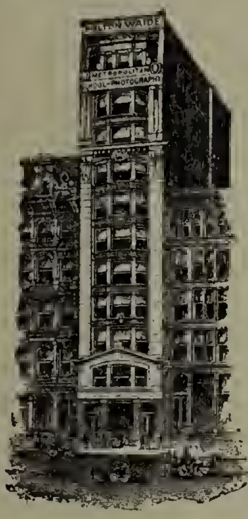

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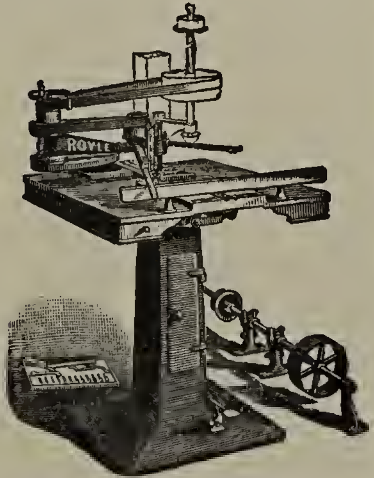

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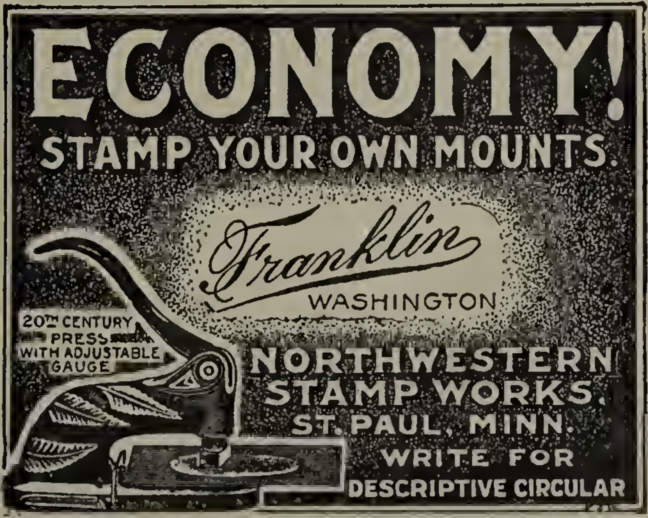

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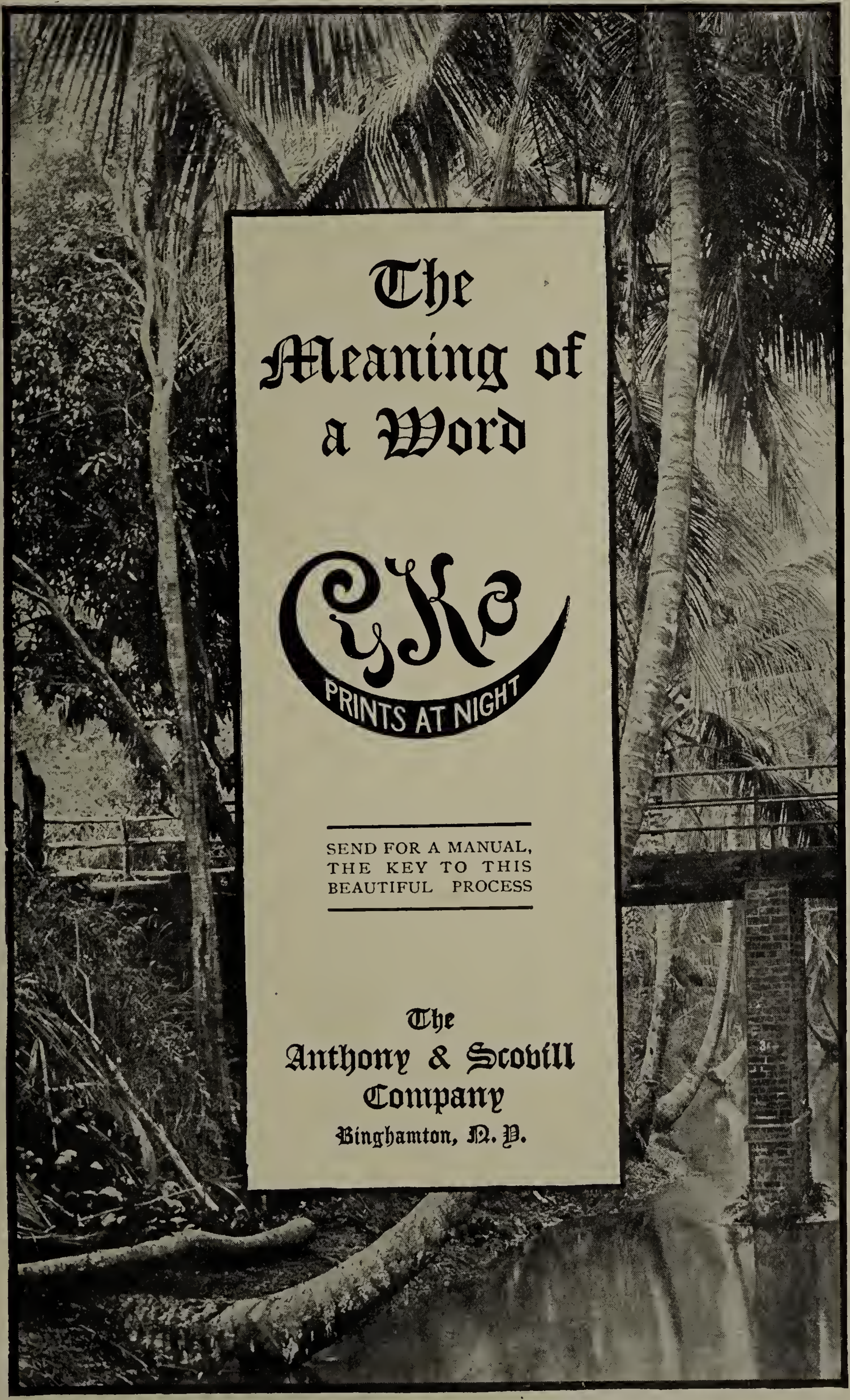

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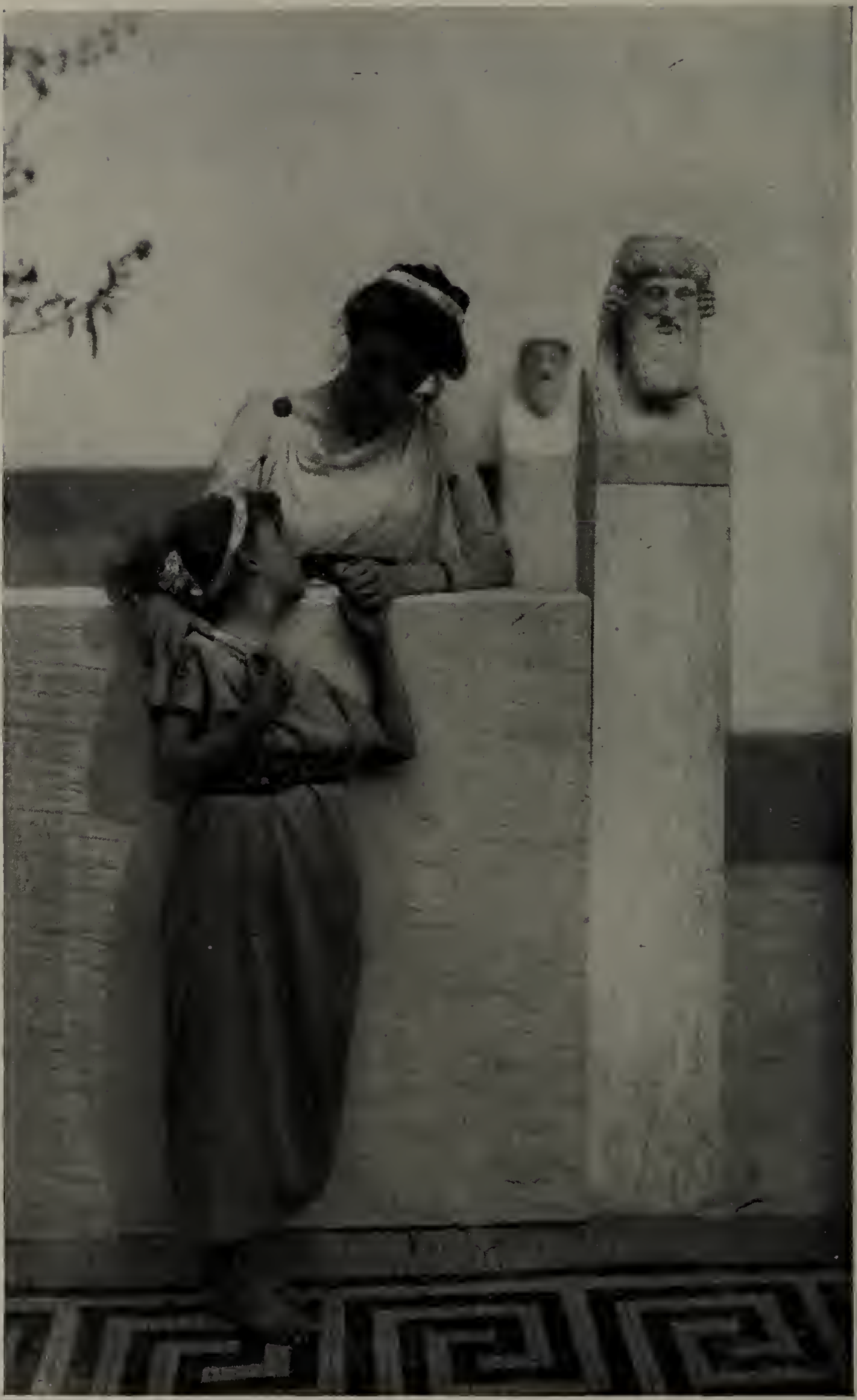

CONFIDENCES *By Guido Rey*

The
Photographic Times

VOL. XXXIX MAY 1907 No. 5

MY WORK IN INDIAN PHOTOGRAPHY.

BY EDWARD S. CURTIS.

YOU ask me to tell you something of my work that would be of interest to photographers. I question anything in connection with it or information in regard to it being of much help to my fellow photographer, unless it would be to convince him that his life is one of comparative ease and comfort. To begin with, for every hour given to photography two must be given to the word picture part of this record of the vanishing Indian. True, many of the hours given to the writing are those of the night time, and the light is not a 32 candle power stand lamp, but most likely two or a half dozen tallow candles fastened with their own wax to a scrap of plate or grub box. The everlasting struggle to do the work, do it well and fast, is such that leisure and comfort are lost sight of. To the oft-asked question, "What camera or lens do you use," I can only reply, I couldn't tell to save my soul; it is enough for me to know that I have something that will make pictures and that it is in working order." And as to chemicals, I have almost forgotten that they are a necessary part of photography. With us it is seven days in a week, twenty-four hours in each day and thirty-one days in most months. We sleep when we can't work, and here is one place where we are most particular. Our beds must be as comfortable as human ingenuity can make a camp bed, for while we do rest we want to rest well. Most likely the roof to our apartment is, the sky blue dome, but to sleep in the open is real rest.

The field season of 1906 was nine months long, beginning in the mountains of Apacheland, with snow still in sight, and long before the season ended we were snow bound in the mountainland of the Hawalapai. The field party for the season was, firstly, —Justo, our Mexican cook; two helpers, who could best be called ethnologists, collecting the lore logic and history of the people, one of whom acted as my stenographer—and myself, I doing the photography. There being three of us at work there had to be three interpreters, which, of course, we secured from each group with which we were working. During the season we have worked with fourteen languages and no end of dialects. Our camp equipment weighing from a thousand pounds to a ton, depending on distance from a source of supplies; in photographic and other equipment there were several 6½x 8½ cameras, a motion picture machine, phonograph for recording songs, a typewriter, a trunk of reference books, correspondence files covering over a year of business affairs, as being always on the move it is necessary to keep up my regular correspondence in connection with the work, its publication and the lectures all from the field. Tents, bedding, our foods, saddles, cooking outfit, four to eight horses—such was the outfit. Someone has to boss the job; usually that falls to me. Everything must be kept on the move that no time is lost. Teams have to be bought, supplies secured, both commissary and photographic, arrangements made for getting and sending mail. On long stretches the whole outfit has to be shipped. At times the nature of the country does not permit of wagon travel and a pack train has to be made up and managed, or, perhaps it is water transportation, boats to be bought or built, and when secured and loaded must be handled, be it rough or smooth water, and withal, the one thing that must never be lost sight of, the purpose of the work; a picture and word history of the Indian and his life. But at times the handling of the material side of the work almost causes one to lose sight of art and literature.

During the field season of 1905 sixty thousand miles of railroad mileage were used. The totals of 1906 are not yet made up. And then come the elements. The rains pour down. What was an arid desert when you made your evening camp is soon a lake. Perhaps in the darkness of the night you have been compelled to gather your camp equipage and carry it to higher ground; or, perhaps it is a fierce wind striking your camp, and if strong enough it will either blow the tents to the ground or whip them to shreds. And then comes the sand storm. No horse can travel against it. If en route you can but turn your wagon to one side to furnish as much of a wind break as possible, throw a blanket over your head and wait for its passing. It may be two hours or it may be ten, and when it is passed your equipment is in sorry shape. Nothing can keep it out. Cameras, plate box, plate holders, motion machines, food—everything is sifted full of this fine, powdery sand. Hail storms will beat down on you and whip your camp into tatters. At another time it may be the heat, so intense that a furnace seems cool in comparison. I have a keen recollection of a ten day trip through the desert and mountains when each day the thermometer registered 122 or more in the shade and water was more precious than gold. And, on the other hand, it may be snow storms and cold that will cause you to forget that you were ever warm. We have just passed through one. We went into the high mountains with a hunting party of Indians. Soon the snow began to fall—and when it snows in these mountains it does that and nothing else. When the snow nearly reached our wagon hubs we decided it was time to retreat. The road, hard to find at any time, was lost in the snow. Mountain peaks and land marks were invisible in the falling, drifting, swirling mass of white. The horses floundered and fell, regained their feet and struggled on, only to give out completely and lay down in the harness. Food ran low, and we had the added misery of hunger along with bitter cold. At another time a stubborn driver rushed his four-horse team down a bank and into a freshet torrent, where, in the fragment of a minute all you could see of that wagon was its canvas top, and a muddy stream for a quarter of a mile was strewn with the wreckage. From a half dozen cameras scarcely one could be patched up out of that wreck, and plates—well, the shortest time to get a new supply was ten days and a trip to cost hundreds of dollars. Another day the pack mule with my only camera fastened to his back slipped and rolled down the canon a mile. The camera was spread out on the mountain side seeming to be nothing but fragments. Twelve hours steady, patient work and it was patched up so it could be used. But such a sight! No camera worker before ever saw anything quite its equal. On the outside it was a bunch of ropes bound and twisted in every direction to hold it together.

All this has not happened in one season. There have been nine of them, each having its good share, and yet I have not spoken of the people with whom we have to deal. Each tribe or village is like unto no other, but all have their full share of superstition and secretiveness, to say nothing of stubborness. Each tribe visited is a new situation to be taken up and mastered, and that quickly. Every phase of their life must be noted and ,as far as possible, pictured, and the gathering of this lore, logic and myth must go hand-in-hand with the picture making, as without the knowledge of their life, ceremony, domestic, political and religious, one cannot do the picture work well.

How do I manage the portraits and the handling of the life! In every way. Conditions cannot be changed. I must fit myself to them. Some of the portraits can be made in my tent, which is a fair sized one made for photographic work. Many more are made in the open, in the soft light of the morning or the intense glare of the mid-day sun. The subject secured, it matters not the time or conditions. The picture must be made. My fine picture of Alchasa, the Apache chief, was made in the strong light of the midday sun, the back ground a juniper tree. The picture of Red Cloud, the Sioux, was made in strong sunlight on the open prairie. The particularly fine one of the Jicarilla chief was also made in the strongest glare of open sun and the background a red blanket. A certain fortunate picture caused the question, "How did you get that beautiful soft effect?" It is easy to answer. The picture was made in a blinding snow storm and the falling snow between the lens and the sitter caused the semi foggy effect. The results were satisfactory but the doing of it exceedingly uncomfortable.

My mood to-night seems to have been to tell of the difficulties and hardships. Do not think that this is the only side of the work. For every hour of misery I could tell you on one of delight, and the most stormy days have had glorious sun sets, and for every negative that is a disappointment there is one which is a joy, and for every page of these trials I could write you countless ones of the beauties of Indian-land and Indian life.

You may ask how long the field work will last? When the Navaho does not know the answer, he says, "Whoola," which is, perhaps, the only answer. This I do know. That for six years more the work will be driven to the limit of human endurance. After that there will be a little more leisure.

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BY A. J. JARMAN.

TO make a copy of a Daguerreotype by either the wet collodion process or with an ordinary dry plate is not a difficult matter. A copy as made in either case is a negative, and does not represent the original only in so far that it is a copy from which a positive must be printed. By the wet collodion process a moderately good positive can be made direct, if the developer is made with a nitrate of iron salt, instead of the protosulphate of iron. To produce a Daguerreotype from a daguerreotype is not such an easy matter.

If the Daguerreotype to be copied is in a good state of preservation an excellent reproduction can be made from it by the electrodepositing process. If the surface of the original is very much tarnished, or has been rubbed, and presents any finger marks upon it, all these defects will show up in the reproduction. One point about the reproduced picture in copper will be found, it will be in reverse compared with the original. In fact, the copy will represent the person in the correct position. The original Daguerreotype was nearly always the reverse in position, it may be said nearly because the general practice was to photograph the sitter directly in front of the camera, instead of using a prism which would render the Daguerreotype correct as far as position was concerned. More than this, when a prism is used, the camera and lens point exactly in right angles to the sitter and the time of exposure is greatly increased. This method was tried, but owing to the increased length of exposure, it was abandoned, so it will be only fair to assume that a Daguerreotype that is to be copied will be one that was taken without the prism. Such being the case, the reproduction will be found to be correct. Of course it is to be understood that there is no film of varnish upon the surface of the Daguerreotype. As a rule, the Daguerreotype was rarely coated with varnish. These beautiful pictures were simply separated from the glass cover by means of a gilt mat, then carefully bound around the edges with gummed paper, and when dry, these edges were dipped into melted wax, so as to form as nearly as posible an air tight joint, with the result that the portrait has been well preserved for many years.

In attempting to make a copy of a Daguerreotype, it will be necessary to fit up a set of two Bunsen cells as generators of the electric current, unless the electricity can be obtained from some other source. In either case, an electro motive force of three volts will be required, and a current of about four or five amperes. This is to be obtained from two well made Bunsen nitric acid cells each of half a gallon capacity. These cells are made up in the following manner. Obtain two stone ware jars, the kind that is used for preserves will answer the purpose well, fit a zinc cylinder into this about eight inches high, and four inches in diameter, one-eighth of an inch thick, and bend it so that there is about a three-eighths of an inch separation from the end. This gap is to admit of free circulation of the exciting acid; place in the interior of this a round porous pot, eight inches high and three inches outside diameter. A carbon rod nine inches long by two inches wide and one inch thick must be placed in each porous pot, and fitted with a brass clamp at the top. The zinc cylinders must also be fitted with brass binding screws for the purpose of attaching the conducting wire. The zinc cylinders must be coated with quick silver inside and outside. This is called amalgamating. It is accomplished by dipping the cylinder into a stone ware jar containing a mixture of sulphuric acid and water, one part acid to eight parts water. As soon as the acid solution has attacked the zinc, some quicksilver must be poured upon it, and well rubbed in with a small mop made by tying a piece of rag upon a strip of wood. Coat each cylinder in the same manner inside and outside; they will then be ready for use. Place each zinc into a stone jar, with the porous pot in the center, and the carbons standing in the porous pots ready for use, make up the following solution, this is to be used to deposit the copper upon the Daguerreotype,

Sulphate of Copper..........	1 pound
Hot Water	6 pints

stir the crystals well until completely dissolved, allow to become cold, add half an ounce by measure of sulphuric acid, stir again, then filter through absorbent cotton into a clean glass or stone ware vessel, with a wide open top. Now prepare a mixture of sulphuric acid and water composed of common sulphuric acid, one pint to eight pints of water. Enough of this must be made to charge each of the battery jars. When the mixture is cold, fill up each stoneware jar around the porous pot, with the zinc cylinder in place. Fill up the porous pots with strong nitric acid. In this acid, the carbon rods or plates stand, attach a piece of clean copper wire to one carbon plate by the terminal, and lead this to the zinc cylinder of the next cell. Attach another piece of wire to the zinc of the first cylinder which must be long enough to stretch over the vessel of sulphate of copper solution and fit another wire to the remaining carbon of the second cell. These cells so connected form the battery for generating an electric current sufficient to deposit upon the Daguerreotype. These cells should be placed outside the room, upon a window sill, and the conducting wire led in to the depositing vessel. The Daguerreotype must have the wire attached to it, that leads from the zinc cylinder. The back of the Daguerreotype must be brushed over with shellac varnish and the edges also. This must be repeated twice, allowing the varnish to dry between each coating.

A plate of copper must be attached to the wire leading from the carbon plate to the next cell, both the copper plate and Daguerreotype may now be placed into the sulphate of copper solution, facing each other about three or four inches apart. The battery being now in action a deposit of copper will take place slowly all over the face of the Daguerreotype, and will continue for about six hours. The deposit must be watched so that it does not become too thick. Enough copper may be deposited in four or five hours. If the plates are about 2½ x 3, the deposit will be complete in four hours, if larger, it will take about six hours, or perhaps twelve. The writer made a 6½ by 8½ reproduction of a Daguerreotype upon one occasion which required twenty-four hours to deposit, the battery cells requiring to be charged with acid solution twice to accomplish this.

As soon as the deposit of copper is complete, the Daguerreotype must be removed and washed in clean water, dried, and the edges cleaned up with a file until a distinct view is obtained of the line that marks the deposit from the Daguerreotype. When this is accomplished, brush off all filing, and dip the plate into hot water; remove it and while still hot, insert the top of a penknife blade at one corner, and pry the deposit from the plate. The result will be that the deposited copper will leave the Daguerreotype perfectly and it will be found that there is a beautiful impression of the portrait upon or in a plate of pure copper, not quite identical in color with the original, but a perfect reproduction in pure copper with every mark, defect or blemish reproduced perfectly. This operation does not appear to affect the original at all. In fact, several such copies can be produced. Sometimes the portrait is observable from the back of the copper deposit and continues until the plate is complete. One plan in carrying out such work, and to make sure that there will be no adhering of the deposited plate to the original, is to flood the face of the Daguerreotype with a mixture of benzine six ounces, to which has been added one grain of white wax The quantity of benzine may be increased to eight ounces and answer well. The extremely faint coating of wax does not affect the conductivity of the surface, but insures the non-adherance of the deposit to the original. When the battery has performed its work the zincs, porous pots and stone ware jars must be well washed and stood aside for future use. This battery has been described in full, because it has been employed for the purpose of reproduction, and answered well. Of course where a supply of electric energy can be obtained as from a plating dynamo machine, that would save some expense and trouble. The electro-motive face must never be high for this purpose, not exceeding four volts.

The beautiful rose colored surface of the electro-deposited copper can be preserved by coating the surface with amyl-acetate collodion. This material when dried down does not in the least affect the bright surface, but it thoroughly protects the surface from the effects of the atmosphere. The surface of any Daguerreotype can be preserved and any further damage occuring from sulphurization will be stopped by employing the amyl-acetate collodion as a varnish. This treatment would prevent electrotype copies being made, but it would thoroughly preserve the original picture.

When the metal copy has been completed, it should be framed which can readily be done by placing a bronze cardboard mat upon it, with a sheet of glass in front, attach the copper to the cardboard mat with strips of gummed paper, or sealing wax, when the glass and mat can be edged all round with passe partout gum paper. This will make a neat and substantial frame in place of the Daguerreotype case which to-day is not obtainable Of course any other kind of frame may be substituted, the one described above answers the purpose quite well, and when the copper reproduction is fitted up in this manner, it will be a very easy matter to set it into a suitable frame to suit the taste and choice of the owner.

LOOK PLEASANT.

BY WILDIE THAYER.

Look pleasant, smile, look just as though
You were going to laugh;
The world a camera is, you know,
Which takes your photograph.
—*The New York Magazine.*

GETTING RESULTS.

In Six Parts. Part VI.

BY C. H. CLAUDY.

IN this, the last paper of this elementary series, which is designed to enable the man who knows nothing about a camera to take a photograph and get a result of some kind, which will in turn, enable him to get other and better ones. I can think of no better or more important subject to talk about than exposure.

For upon the exposure of the plate, and its success, depends almost wholly the success of the resulting picture. You may juggle in development, and produce no result—you may intensify or reduce, dodge in printing and fake on negative and print, but no matter what is done, that doing is but compromise, make-shift. —a fugitive, unnecessary and altogether unsatisfactory substitute for correct exposure and consequently correct values in the first place. On the principle that half a loaf is better than none, an intensified, faked or otherwise manipulated negative and print may be to some extent satisfactory, but no hungry man will deny the proposition that a whole loaf is better than a half—no earnest photographer can controvert the statement that a good negative from normal means is better than one which has suffered after treatment.

There are several ways of arriving at the experience which will dictate the correct exposure under varying conditions. First, and possibly best for the beginner, is a set of exposure tables, or an exposure meter. You, who start out with a camera and no more knowledge of how much exposure to give than can be found in the first chapters of this series, would be in a hard case indeed, had you to go from a darkened interior to a sunlit landscape, from there to a flash light portrait and finish with a speed snap shot on a dark day. However, those who prepare exposure tables have gone the gamut and have provided tables giving the correct exposure for a great many different classes of subjects under many different conditions. If you can know with certainty that the conditions before you are those mentioned in the tables, your exposure, made by the tables, will be correct. If for instance, on June first at noon, you wish to photograph a boat at sea, in a brightly lit, sunny stretch of water ,with no clouds, and you use the stop indicated in the tables for those conditions, you will get the same kind of exposure that the man who made the tables got when he determined what was the proper exposure.

But suppose you are in a room, making an interior,—you have three windows —the exposure table provides for two— the tables say so much for light walls— and yours are gray or drab—suppose the tables provide for clear day, and there is just a suspicion of a haze—suppose they say two o'clock and your time is three—how are you going to judge? That is where the tables fail—mere words do not convey accurate ideas. Different men interpret "Very bright, bright, hazy bright, hazy, dull, very dull, dark, very dark" differently, and who is to decide?

The exposure meter,of the actinometer type,—which arrives at a certain factor, called the actinometer time, by exposing a small bit of sensitive material to the light by which the picture is to be made and determining the time by the interval it takes to darken this sensitive material to a standard tint, solves this problem, but leaves still a personal equation of eyesight and accuracy and fails to take account of shadow detail in all cases. Still, it is, I believe superior to the tables,—and certainly to the beginner, a very present help in time of trouble.

Another way,—and it has much to recommend it, is to buy a case of plates—twelve dozen—and, on as varying conditions as possible, make twelve exposures a day for twelve days. If, at the end of that time, you can't arrive at a pretty accurate guess of any ordinary condition, you had better give up the game.

No photographer, I don't care how long he has been at it, can guess it right every time. For instance, in spite of many years of experience I fell down woefully and badly on an exposure I made last year. It was at the top of a 170 foot lighthouse. I wanted a picture of the apparatus. I crawled up on the top gallery (and you can see my finger prints on the iron ladder rungs now!) heavy camera in one hand, and a most tenacious grip in the other, fear in mind and my eyes glued in front of me. I arrived, set up my instrument to take the mechanism through the storm glass, and focussed. There was no room for me to get the picture without photographing through the glass.

I was out doors, taking an indoor picture. Half the lantern was hung with yellow curtains. The sky was somewhat overcast. I couldn't judge much from the looks of the image on the ground glass, because the breeze was so strong and my position so precarious I couldn't hold the cloth tightly down to exclude the light. I stopped to sixty-four and let her go for ten seconds. Pure guess, and a very bad one. Two seconds would have been ample. I failed to allow for the light reaching up from below! But what experience would have availed me? Had I had a meter with me,—if I could have trusted it, I would have been in better fix.

Experience is a valuable teacher. For that reason the exposing of plate after plate for the mere purpose of learning the exposure is very valuable, if you can afford the plates. I, who have been through the mill, tell you it will pay. But if you don't think so, then by all means get a meter or tables, and use them as little as you can. Determine the exposure for yourself,—by memory, by comparison in your mind with similar scenes you have already taken, by guess,—by any means within your power and then see what the table says.

If there is any doubt, always err on the side of over-exposure with the single exception of speed pictures,—where the increasing of the time will ruin the picture by including movement. For instance, an under exposed picture of a trotting horse, which is very black and white but with all the members sharp, is preferable to a correctly exposed picture of a trotting horse which is an elongated streak with a white blurr where the feet should be!

Over exposure, within the limits of the latitude of the plate, can be corrected by reduction after the negative is developed—or, the plate can be under developed and printed on a contrasting medium. The former method is to be preferred. But if the over-exposure has been slight—not more than two or at most three times, a normal print from the dense negative can be obtained by simply increasing the time of printing.

Not so very long ago I saw a set of tables and a diagram to enable the photographer to determine the exposure for any stop, knowing the proper exposure for one stop. There was nothing the matter with the table and the diagram, except that it appeared to me a needless waste of time. With U. S. stops, which are multiples of 4 and by which exposures are proportioned according to the multiple, a knowledge of one stop insures a knowledge of all, as far as exposure goes. Thus, one second at U. S. 4 requires sixteen second at U. S. 64 4 into 64 goes 16 times. There is no need to have a diagram to tell any one so simple an arithmetical process as that. With the F. Stops the matter is a little different but scarcely more difficult. The result of dividing the larger stop by the smaller must be squared, which gives the multiple for the known exposure. Thus if the exposure at F. 8 is one second, at F. 64 the exposure will be sixty four seconds—8 into 64 goes 8 times, and the square of 8 is 64. Taking another instance, if the proper exposure at F 16 is two seconds, at F 32 the proper exposure is eight seconds. Into 32, 16 goes twice,—the square of two is four, and four times the exposure—two seconds, is eight seconds. When the exposure is to be altered by altering the F diaphragm by but one number—from F 8 to F 11 or F 16 to F 22.5 this calculation is a little intricate for head work, but such an increase is figured by simply doubling the exposure, inasmuch as the usual F stops run step by step with the U. S. stops, as follows:

F 4	F 8	F 11	F 16	F 22.5	F 32	F 45	F 64
U.S. 1	U.S. 4	U.S. 8	U.S. 16	U.S. 32	U.S. 64	U.S. 128	U.S. 256

It will be observed that the U. S. and the F systems meet and pass at F 16 and U. S. 16. This is, then, the common factor. To determine the F value of any U. S. stop, then, multiply it by 16 and extract the square root, thus, to find the F value of U. S. 8—8 x 16 is 128, and the square root of 128 is 11 and a small fraction (to be neglected.) To find the F value of U. S. 4—4 x 16 is 64 of which the square root is 8, the F value.

Per contra, to obtain the U. S. value of any F stop, square the stop and divide by 16. The U. S. value of F 4 is therefore 4 x 4 equals sixteen, divided by sixteen gives one—U. S. 1 which is the equivalent of F 4. The U. S. value of F 64 is—64 x 64 is 4096, divided by 16 is 256,—U. S. 256 the equivalent of F 64.

To the uninitiated all this may seem very complicated. It is very simple. I will probably be requested to state why, when I went over part of this ground in Part II, I now go over it again. It is because then you were a beginner, and had to blindly follow instructions,—now you have begun to take pictures, you will realize the importance of the subject,—and if I asked you to go back and reread, you would probably forget it!

Don't forget that splitting a lens makes all the diaphragms different from their markings. As you increase the focus by practically one hundred per cent., you increase the exposure by—no, not by one hundred percent but by four hundred percent! You double the focus in splitting the lens. A one inch lens of eight inches focus works at F 8. When you make this focus sixteen inches, still with the one inch opening the lens works at F 16. And following the rules given above—8 goes into 16 twice and the square of 2 is four, which is the multiple of the proper exposure in the first instance.

Now, in closing, I want to give you a hint which some never take, and others only after many years. It is yours right now, if you make it so. It is no secret, either, but because few appreciate the importance of it, few think it worth remembering. It is this:

The greater the contrast, the greater

the exposure required in proportion to the light—the less the contrast, the less the exposure required in proportion to the light.

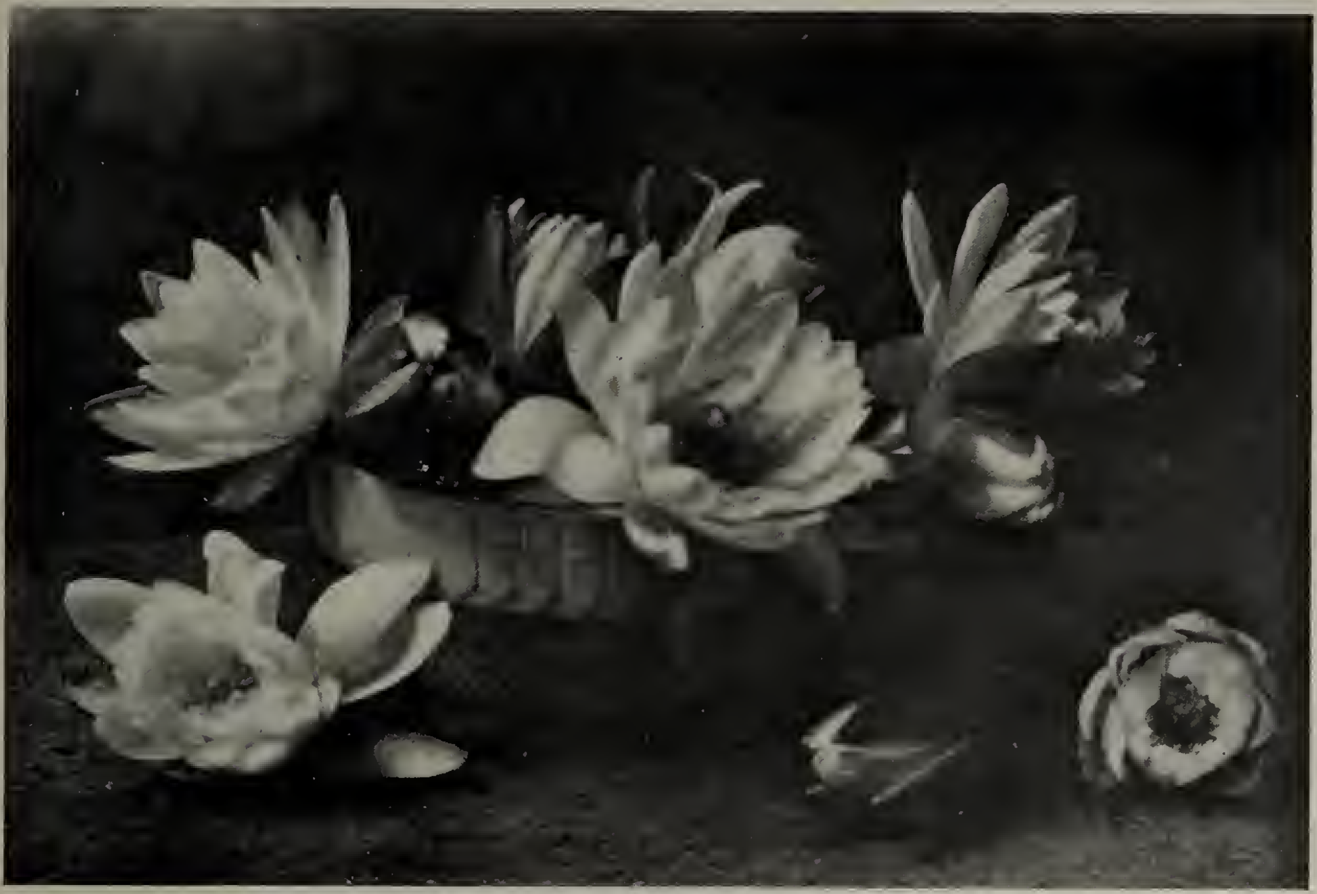
For instance. A bright, sun lit landscape, with no shadows will require less than half the time, the same landscape will require if a herd of either dark colored cows, or light colored sheep be in the foreground. In the first case, you must exposure for the shadows under the cows—in the second, you must over expose the white sheep so that they will not print too white with the rest of the green landscape.

An indoor portrait of a white skin, against a white background, with white drapery can be made in half the time, or less, than will be required with the same sitter and background in a dark dress. Put another way, the greater the scale of tones, the greater the exposure in proportion—in order to get them all. The less the scale of tones, the less exposure required in order to get them all. I need hardly say that I do not mean that a contrasty landscape requires more exposure than a flat interior. I said, *more in proportion.*

I regard the constant application of this one piece of knowledge as of paramount importance in rightly judging proper exposure, and of all the steps in the making of a photograph, not one is so important as this same question of proper exposure. Learn the latitude of a plate, and exposure at or near the center of that latitude will give you a good negative every time. Fail in this, and no dark room skill, no mastery of printing or other after treatment, can make up what was lost in the beginning

A HARBINGER OF SPRING *By Joseph R. Iglick*

ALL BARE ARE THE TREES ON THE GREY HILLSIDE *By William Wheelock*
(First Prize May Competition).



POND LILIES *By E. S. Blakely*

THE MONTHLY COMPETITION

Suppose for once you put yourself in the position of the judges of these competitions. What confronts them, and the writer of the criticism? Every contestant submitting prints feels that his entries have merit and stand a good chance of winning, and afterward, often feels that the winners are vastly inferior to their own rejected entries.

Many pictures submitted were taken under unusual conditions, or possess some unusual or sentimental interest to the maker and his immediate friends, which warps their judgment as to its real pictorial value. In a portrait, it may be that a peculiarly elusive or characteristic expression of the sitter has been caught, making the picture pleasing to the friends of the subject, but as a whole it may be badly out of drawing, or poorly spaced, or totally lacking in composition.

Again, a landscape or marine may have been taken on some occasion of special moment to the photographer, and to him recall memories and possess qualities beyond the ken of the judges. The judges and the editorial staff have themselves been competitors in days gone by, they fully realize the position of the contestants and their own. Imagine if you will, a great mass of photographs of all shapes and sizes and printed on every possible medium, and none of them possessing any *personal* interest to the judges. Their judgment must perforce be unbiased and impartial. Bearing in mind the most important feature of these competitions—the educational—they must select as winners the prints most obviously possessing true artistic and pictorial qualities. Further, realizing the limitations of the half tone process, they must also select pictures that will retain in the reproduction those qualities that lifted them above their competitors, and made them worthy of consideration. A picture so subtle in quality—or so low in tone as to reproduce merely as black smudge or blank white paper—would be utterly valueless from the educational standpoint, and would reflect only discredit upon the judges and the publication reproducing it. How then, are the pictures selected?

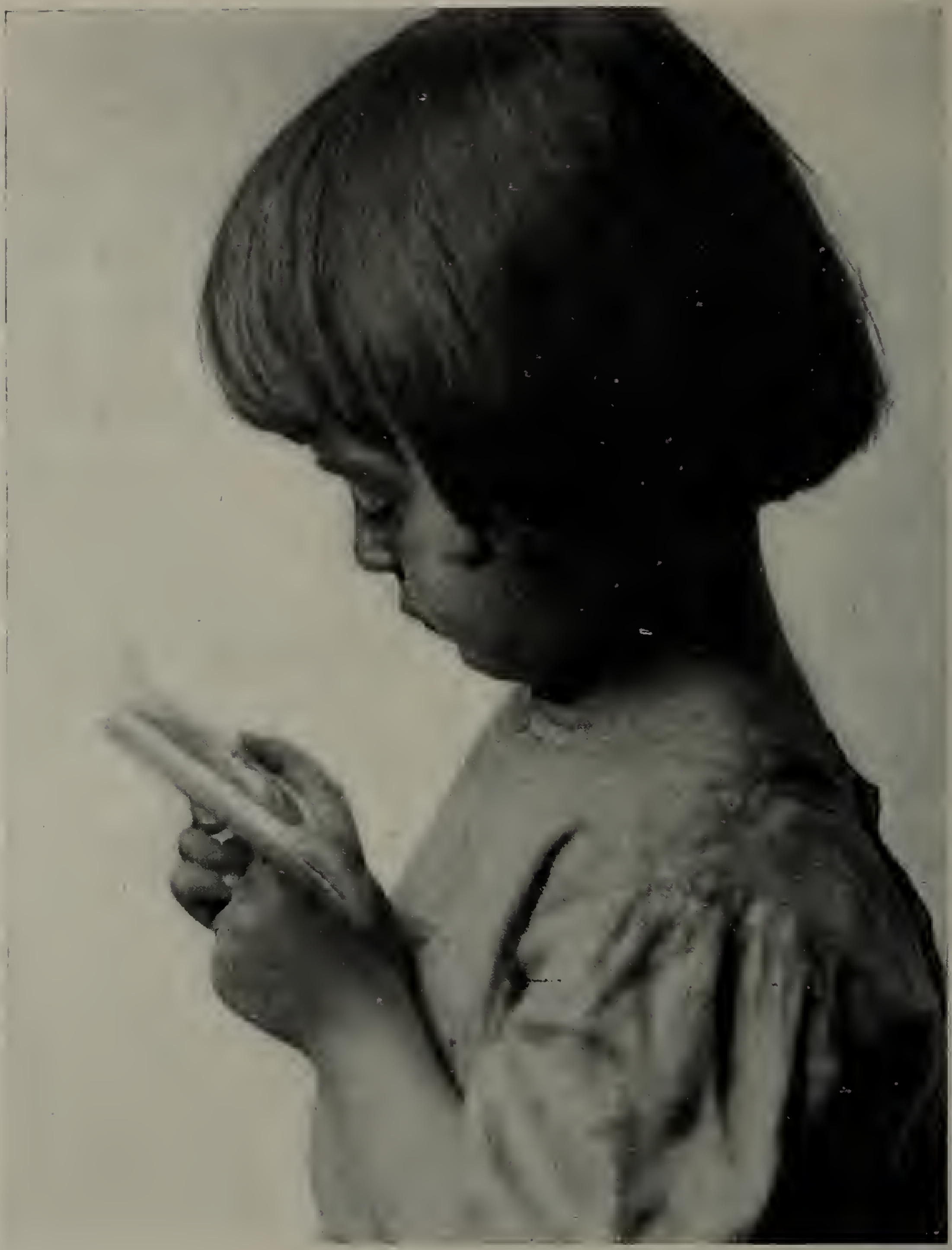
At the commencement every entry is placed in a pile with the others. Next the entries are divided into two sections, the "hopeless" and the "possibles." The "hopeless"class consisting of such entries as grossly violate the rules of good art are quickly selected, and then the real task of the judge commences. Every one of the "possibles" is placed in a good light and the judges make a mental selection of those most pleasing to them. These prints are then removed from the possible class and placed by themselves. Next the "possibles" are again canvassed by the judges to see if any entry of merit has by any chance been overlooked; if this prove the case, such entries are removed to the preferred class and the remainder of the "possibles" go to join the "hopeless" class. Having selected the cream of the competition, the pictures are all placed face up together in the best possible light, and discussed. "Well gentlemen select the best picture." Oftentimes the judges will all make a concerted move for one picture, then the first award is easy. Sometimes each will come forward with a different one, in such case each is again discussed, and the process of elimination continued until the award is made, and so on until all awards have been adjudicated. Is this an easy task, think you? Frequently much time will be consumed in considering the merits of two pictures, so anxious are the judges to do full justice to the contestants. Right here let your critic offer a suggestion. In submitting prints for these competitions, place your entries face up and consider how long could you live with each particular picture if it were framed and hung on your wall. Would it wear well and prove a never failing source of pleasure, or does it possess some defect that would annoy you at every examination? This is a good test, and if your entries pass this, they will stand a much better chance in the hands of the judges.

Now as to the winners in this particular competition. The first award, "All Bare are the Trees on the Gray Hillside," by William Wheelock, is the simplest of all in composition, but doesn't it welcome you to the out of doors, and make you feel that that particular woodsy bit embraces the most enticing possibilities! How the light on the white birch trees and in the foreground suggests that spring is coming, and that if you looked real close, a tiny violet or so might be found nodding a shy welcome to you from among the leaves. There is a picture you can live with, it only tells a simple story but a pleasant one. The negative was made in April, 4 P. M. diffused light, single spectacle lens,, 13¾ inch focus (the print is 5 x 7) stop F. 18, one second exposure, printed on Autotype carbon.

The second award suggests an entirely different phase of nature (we fear somewhat that the reproduction will fail to show the subtle qualities.) "Waning of the Day," by A. B. Hargett tells the story of completion, the end of the day, evidently a pleasant one, the soft velvety shadows of the deepening dusk and the last faint glimmer of the sun on the pool and in the sky, telling of satisfactory accomplishment, sort of makes you feel, well *that* was a good day,—glad though it's done, and the welcoming big arm chair receives you for pleasant contemplation. The negative was made in Nov-

WANING OF THE DAY *By A. B. Hargett*

(Second Prize May Competition).



CHILD STUDY *By Mrs. W. W. Pearce*
(Honorable Mention May Competition).

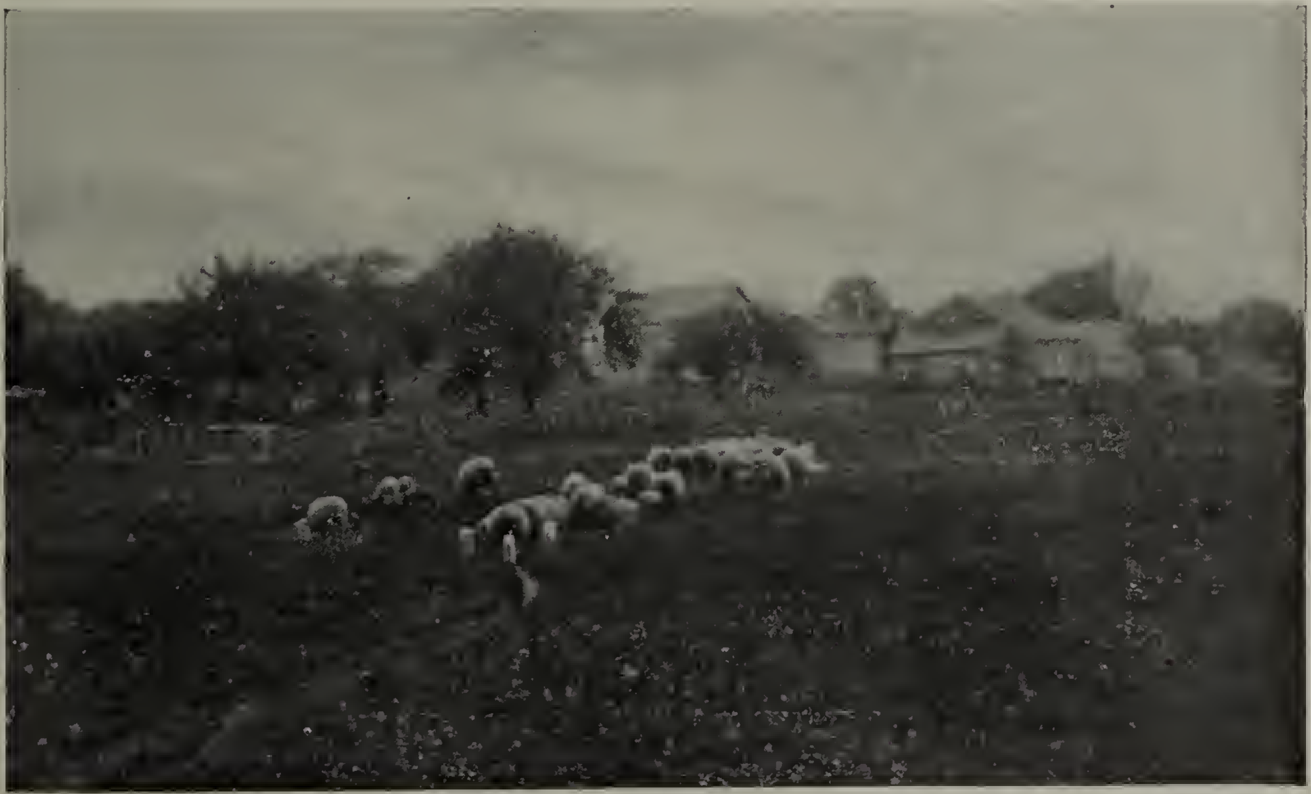
ember about 5 P. M., exposure two minutes with rear combination of lens stop F. 22. Cramer Iso plate with ray screen, print on velox, developed with Amidol.

The First Honorable Mention brings a subject dear to us all, somebody's baby, just a dear little chubby-faced youngster absorbed for a moment in a picture. Here again is a picture that helps us think—what we were like when a youngster, what we wish we had been like and how dear to us are our own children—if we are fortunate enough to possess them. This picture was made by Mrs. W. W. Pearce under studio light, 1-5 second exposure on 5 x 7 Cramer Iso plate, and enlarged on Velvet Bromide.

The Second Honorable Mention, "Pond Lilies," by E. S. Blakely is a reminder of all sorts of pleasant things, summer days, cool waters, and freedom from care. How a picture can stimulate the imagination, who *could* think of sordid things when contemplating the reproduction of these beautiful lilies? Most of us have had the pleasure of gathering pond lilies, and the memory of that pleasure lingers and is refreshed by the picture—without flowers this earth would be a sorry place. These flowers were photographed indoors, July afternoon, Dallmeyer lens, stop F. 16, Cramer slow Iso plate, Metol Eikonogen developer.

The Third Honorable Mention, "The Return of the Flock," by John W. Schuler affords another phase of the pleasant out of doors. Just a sort of a nice place to be if one had nothing to do, and plenty of time to do it in. This picture was taken in May, 4.30 P. M., 1-50 second exposure, stop F. 8, Stanley plate, printed on W. & C. platinotype.

Have you noticed that we have not in any manner criticised the composition of any of these pictures? We have departed from our usual custom for a reason. There is a reason. Every picture to be a picture, must aside from conforming to the rules of art, have a reason for being, it must stimulate the imagination, and in some manner afford pleasure to those who look at it. The stronger the story it tells, the longer you can live with it and enjoy it. This is why we have dwelt so strongly this month on the *interest* side of the picture. Remember that the judges are just common ordinary humans, and are attracted to a picture *First* because it *interests* them, and that composition, tonality and spacing are *secondary*, but the chances are that if the picture does not conform to the rules of art, it will *not* interest them, so in making your picture be sure that it will prove of interest and then make it a *picture*, by making it artistically correct.



RETURN OF THE FLOCK *By John W. Schuler*

(Honorable Mention May Competition).

TANK DEVELOPMENT.

MALCOLM DEAN MILLER, M .D.

MR. C. H. Claudy's paper in the March number of the PHOTOGRAPHIC TIMES interested me greatly. Thinking that the editor might find of interest to his readers some confirmatory remarks in support of his advocacy of tank development I wish to add a short account of my experience with the method.

Several years ago I made some pretty careful comparative tests of different developers, settling at length on a special pyro formula for tray development. Glycin proved even better in some of its properties, but the extreme slowness of its action made its use undesirable, except in combination with metol to accelerate development. My pyro formula, well diluted and containing five ounces of anhydrous sodium sulphite to the ounce of pyro, gave me negatives of beautiful gradation, free from stain and yellow coloration, in twelve to fifteen minutes' development: glycin, on the other hand, required twenty to thirty minutes. The prominent advantages of glycin are: (1) absolute clearness in working without bromide, (2) freedom from stain, the deposit being a good black, (3) extreme fineness of grain in the deposit, and (4) printing quality. I may say, without fear of contradiction, that no other developer known to me gives negatives so harmonious nor so capable of printing out the delicate half tones and details in the highlights. In other words glycin does not plug the high-lights, while pyro does.

Accordingly, I began experimenting with glycin and an ordinary japanned fixing box. The results were so good that I put through two batches of six dozen 6½ x 8½ view negatives each. The exposures were all nearly normal, and I got a very fine set of pictures, many of them far better printers than would have been the case if pyro had been used. The imperfections of the box, however, made the process a bother, and so I heartily second Mr. Claudy's advice to get a good tank with removable rack. It is a thousand times more convenient to be able to load the rack in front of the lamp than to grope around in the murk trying to get the plates into the proper grooves, only to find that some are in "kitty-cornered" and the capacity of the tank reduced; to say nothing of lifting single plates to break air bubbles.

This winter I have been able to do my work in making medical photographs solely by using the tank. My only developing space is a small closet in the rear office, with a shelf to hold tanks and ruby lamp. Time forbids my utilizing my regular dark room at home. By the tank method I can finish each day's negatives without interference with other duties. Six or eight plates are developed at one time, transferred to a zinc washing-box full of water, covered, and carried out to the sink, where the water is allowed to run through for several minutes. The cover is then removed and the plates transferred in daylight to the fixing box.

The washing after development is an absolute necessity with glycin, since if it is omitted very bad yellow stains occur when the plate touches hypo. As a rule, the second batch of developed plates is ready for the rinse by the time the fixed plates should be taken out for the final washing.

My tank formula is as follows:

Hot Water..................	5 oz.
Sodium sulphite (anhydrous	140 grains
Sodium Carbonate (dried) . .	140 grains
Glycin	280 grains

Dissolve and make up to 8 oz.

To develop, take one ounce to each quart of water. The dilute developer may be used repeatedly if kept in a well-corked bottle when not in use. The temperature should be as near 50 deg. F. as possible. In summer it is necessary to pack the tank in ice. The plates are examined every fifteen minutes. Over-exposures of moderate amount develop in fifteen minutes, normal exposures in twenty-five to thirty-five minutes, while under-exposures may take several hours.

But, in any case, if the plate is taken out at the right time, whether that time is fifteen minutes or fifteen hours, the weak glycin will give a clearer, better printing negative than any other developer. My medical photographs are made under the hardest conditions I have ever met with in any class of work.I have to carry a battery of lenses from six to eleven inches in focus and make exposures from slow snaps to long cap exposures, on subjects varying from full length figures to close-range detail studies of hands, feet and even tongues. In most cases, the picture must be got at once or it is lost for good. By the use of glycin in the tank I am "getting results" with a minimum amount of trouble.

CITY TOWERS—EVENING *By J. Edward B. Greene.*

Editorial Notes

The great advantages of orthochromatic or isochromatic plates and color screens or light filters do not seem to be fully understood by the amateur. The ordinary dry plate is not sensitive to all colors, and consequently is unable to properly record them. We know that with the ordinary plate, red and yellow, very bright colors visually show up in the print as black or nearly so, while a fairly dark blue will reproduce almost white. Violet, blue, green, yellow, orange and red, are the colors that compose white light, some of these colors that affect the vision strongly are weak in their recording value in the sensitive plate. To permit these weaker colors to record in any where near their proper value, is the purpose of the ortho or isochromatic plate. This is usually accomplished by adding certain dye stuffs to the emulsion. Some amateurs have the idea that the use of such color sensitive plates will afford true color values. This is not so, for while these specially prepared plates will help the strength of the weaker colors, every object reflects a greater or less amount of white light which must be toned down or absorbed, or else it would record before the weaker colors would have a chance to impress themselves. This toning down or equalizing of the colors is the purpose of the color screen, such screen being perforce of a yellowish or orange color. It should also be borne in mind that all color sensitive plates are not sensitive in the same degree or to the same colors, and that a color screen made by the maker of the plate should be used. A color sensitive plate without a color screen will help some perhaps even better than when an improper screen is used, as an improper screen would but serve to increase contrast.

Some makers of dry plates prepare suitable screens for their plates, but those who do not will gladly inform their customers where color screens best adapted to their plates may be purchased.

Many amateurs aware of the advantages of the othochromatic plate hesitate to use same on account of the supposed difficulties in development, owing to the plate being fogged by the ordinary dark room. It is a simple matter to cover up the developing tray until the plate is fully immersed and development started, after which the ortho plate is but little more sensitive than the ordinary The best solution of all is tank development, but that is another story.

By the way, have *you* tried tank development? It takes a whole lot of talk and actual proof to convince some people that new and simplified methods are better than the old ones. It is of no use to reiterate the manifold advantages of this method, as it has been definitely proven that tank development produces the best and most uniform results from either normal underexposed or over exposed plates, and this without the discomfort of remaining in stuffy dark rooms and fussing with stainy chemicals. Tanks for development of both film and plates are on the market, and we urge our readers to afford this wonderfully convenient and efficient method a trial. In this connection we append the opinion of that eminent British authority. A. Horsley Hinton.

"I am coming more and more to the conclusion that anyone who has never touched, seen, or heard about a photographic plate can develop one as well as you or I by simply allowing the thing to develop itself. Now I am perfectly serious in this, and it is only on rare occasions, and at times when I feel particularly clever, that I now ever attempt to develop plates by any personal activity. I let them do their developing by themselves, and they generally do it quite as well as any of us could do it for them, and often better. I dare say some of you know that the mechanical-development-so-many-ticks-of-the-clock gentlemen assure us that once the plate or film, is exposed its fate is sealed, and all jiggering about with the developer has no effect on the ultimate result; and I am quite disposed to agree with them, hence, the importance of correct exposure, and hence my urgent appeal to my readers to get this one matter right; and I am confident that thereafter all things will become easy. Yet I know the novice so well that I can see just where his trouble will arise. He, or rather you (and if it is not you it is someone else), will take the exposed plate from the dark slide, place it in the dish, pour on the developer, all with trembling and anxiety; then the plate begins to darken in parts—certain portions hurriedly get quite black and the general plan of the subject is recognized. But soon the light parts get darker, and presently the whole surface of the plate goes nearly black. But when is this plate to be removed as fully developed? That's the question which it is so difficult to answer, and that is why I suggest that if it presents a difficulty to you, you should resort to a modified form of developing, which will to a great extent cast the responsibility on the plate itself; and the course I recommend is that known as, and you have doubtless heard of it under that name, "*Stand Development*," so called because the plate or plates are allowed to "stand" in the devoloper for a considerable time, and "stand" in a literal sense, inasmuch as they must remain in a vertical position.

LOVE'S TOKEN *By Guido Rey.*

MONTHLY FOREIGN DIGEST.

TRANSLATED BY HENRY F. RAESS.

Drying Post Cards and Other Prints.

BY DR. E. W. BUECHNER.

At times considerable difficulty will be experienced in the drying of post card prints and after drying they often curl and roll up. These troubles are easily overcome by the use of drying frames. These frames are made of light wood covered with cheese cloth, stretched very tight. For use a sheet of blotting paper is placed on a flat surface, and on this the frames. The cards after sufficient washing are placed face down on the cloth, the excess of water removed by means of blotting paper. The frames are then placed aside, the cards drying rapidly, they are then easily removed, and will remain perfectly flat. Another method is to remove the cards before they are quite dry, stacking them up and leaving them under pressure over night. Besides cards, enlargements and prints on bromide and collodion papers can also be dried by this method.

—*Photographisches Rundschau,* Vol. 21, No. 6, '07.

Highly Concentrated Sulphite Solution.

BY DR. E. KOENIG.

The difficulty of keeping radium sulphite solution is well known, various experiments have been made, but with indifferent success. The following is a method which has been in use for several years with excellent results. If commercial sodium bisulphite solution (vide PHOTO TIMES, Nov., '06, page 518) is neutralized with a strong solution of common caustic potash a highly concentrated solution of potassium sodium sulphite results 3 c.c. (40 minims) will equal 2.0 grams (30 grains) of crystalized sodium sulphite. This solution even in half filled and stoppered bottles was found to keep over one year. In neutralizing the bisulphite potassium carbonate is not suitable as toward the end of the reaction much bicarbonate is formed which especially with phenolic developers acts as a restrainer. Sodium carbonate for the same reason is not suitable. The following is the method for making a highly concentrated sulphite solution of good keeping qualities. To one kilo (33 ozs.) of fresh sodium bisulphite solution Sp. Gr. 1.34, this containing about 350 grammes (11 2-3) ozs.) of $NaHSO_3$, is added 185.0 grammes (6 ozs.) of common caustic potash of 100% strength dissolved in 400 c.c. (13 ozs.) of water. The last portion of the solution should be added carefully, testing frequently to see if the solution is becoming alkaline, for this phenolphtalein paper should be used and not either litmus or turmeric, as these are not suitable. The alkaline solution is added until the paper becomes red. Any excess of alkali is neutralized by means of bisulphite solution. The solution is then diluted to 1270 c.c. (42 ozs..) Caustic soda cannot be used in place of the potassium salt, as it does not permit making a solution so highly concentrated. The above solution is equivalent to 850.0 grammes (28 ozs.) of crystalized sodium sulphite.

—*Photographische Korrespondenz,* Mar. '07.

Photographic Sympathetic Inks.

Quillon in his book on secret correspondence, mentions several inks which become visible by photographic means. For instance, ferric chloride is diluted

until it becomes invisible to the eye on paper. But still enough yellow color remains for the camera to detect when photographed, or we can print the invisible writing on bromide or other paper. Quinine sulphate through its fluorescent properties acts strongly on the photographic plate. If we make a solution of 2.0 (30 grains) of quinine sulphate in 25 c.c. (6 drams) of water, the writing will be perfectly invisible, but is easily photographed or printed on paper.
—*Apollo,* Vol. 13, No. 277, Jan., '07.

Combinations of Basic Developers with Sulphurous Acid.

BY A. & L. LUMIERE AND A. SEYEWETZ.

Up to the present time organic developers have consisted, with hardly an exception, of the developing base combined with hydrochloric or sulphuric acid, forming the corresponding salts. It would be an advantage if the free base could be used, as it obviates the introduction of chlorides and sulphates which reduce the developing power. But the bases do not keep well and are pratically insoluble. We have endeavored to remove these undesirable properties by combining the bases with sulphurous acid. This acid combines in the developing bath with the alkali, forming sulphite such as used in all developers. We obtained combinations with these bases: paramidophenol, paraphenylendiamine, and methylparamidophenol. Combinations were obtained by two methods One by acting upon the base suspended in water at 80 deg. C. (176 deg F.) and the other by crystalizing in the cold from commercial liquid bisulphite of 40%. In certain cases, with methylparamidophenol sulphate for instance, combinations can be made if the salt is mixed with a solution of anhydrous sodium sulphite to which has been added ¼ of its volume bisulphite solution heated to 80 deg C. (176 deg F.). The principal properties of these combinations are as follows: With paramidophenol, colorless crystals with a faint sulphurous acid odor, which on long keeping do not become brown in the air as the usual paramidophenol. Not very soluble in cold water, ½% at 15 deg C. (59 F) but easily soluble on heating. When dissolved in hot sulphurous acid, on cooling it deposits white plates which melt at 184 deg. C. (363 deg. F.) the melting point of paramidophenol, at the same time disengaging sulphurous acid. Methylparamidophenol the sulphate of which is known as metol combines more easily with sulphurous acid than paramidophenol. The combination is permanent and possesses no odor of sulphurous acid as in the case of paramidophenol. It is also quite soluble 3 to 5% at 15 deg. C. (59 deg. F.) The developer requires only the addition of sodium sulphite, and no alkali for use. The developer consists of small colorless crystals which do not change in contact with the air. On heating the crystals to 87 deg. C. (188 deg. F.) they fuse and disengage sulphurous acid. The product can easily be recrystalized from a saturated solution of sulphurous acid, by the addition of 1-3 of its volume of sodium sulphite. Paraphenylenediamine combines with sulphurous acid forming small colorless crystals, possessing a faint odor of sulphurous acid, permanent in the air, very soluble in cold water, 19% at 15 deg. C. (66 deg. F.) fusing at 137 deg C. (278 deg. F.) with an evolution of sulphurous acid. The developing properties of the above combinations are similiar to the free base from which they originate. Chemical analyses proved that the compounds consist of addition products. The application of these substances to photography has been protected by patents.
—*Photographisches Wochenblatt,* Vol. 33, No. 2, Jan., '07.

MAKING LANTERN SLIDES FROM BOOK ILUSTRATIONS.

BY GEO. A. HOADLEY.

SINCE the projecting lantern is an important part of the teacher's equipment and since the cost of lantern slides is such that the teacher must either learn to make them for himself or be satisfied with fewer slides a description of a method of making negatives from book illustrations that has proved satisfactory may be of interest.

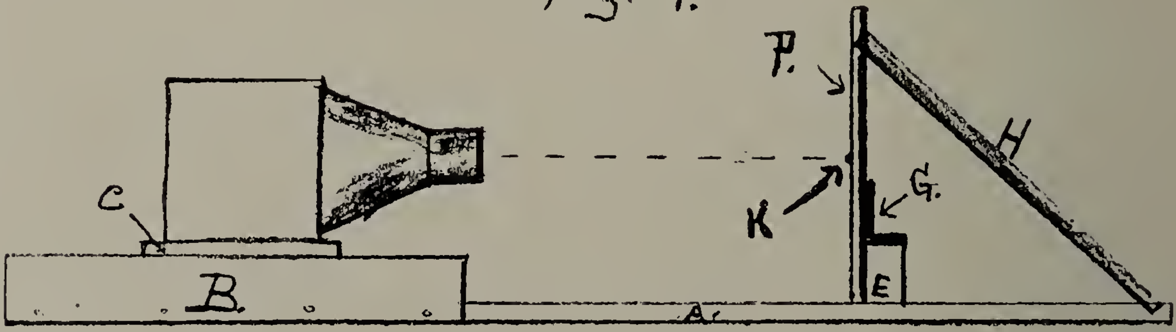
To secure a good image on the ground glass two things are essential; the page must be perfectly flat, and it must be parallel to the ground glass. These results were secured as follows:

To each side of a board-A-five feet long and a foot wide, Fig1 there was nailed a strip-B-three inches wide and two feet long. A board-C-one foot square with two strips-D-Fig. 2, fastened at such a distance apart that the board will slide freely along the two side pieces, is used as a support for the camera. A block-E-a foot long, two inches thick and three inches high is nailed across A about a foot from the opposite end.

A board-F-about two feet square, an old drawing board in my case, is hinged to the block E at G by a pair of strap hinges, and kept perpendicular to A by a brace-H-which is snapped into notches at the ends as shown.

This board-F-Fig. 3, has a row of quarter inch holes bored about an inch from each side and the book-I-is held in place by two strips-J-that are kept in place by small carriage bolts passing through a hole at each end. A thumb nut fastens this securely to the board and holds the page smooth. By marking on the board the point-K-which is in the axis of the camera, and placing the mid-

Fig. 1.



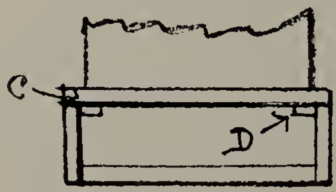


Fig. 2.

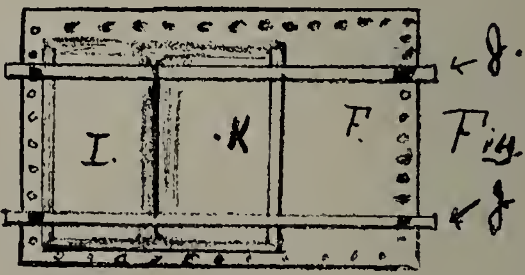


Fig. 3.

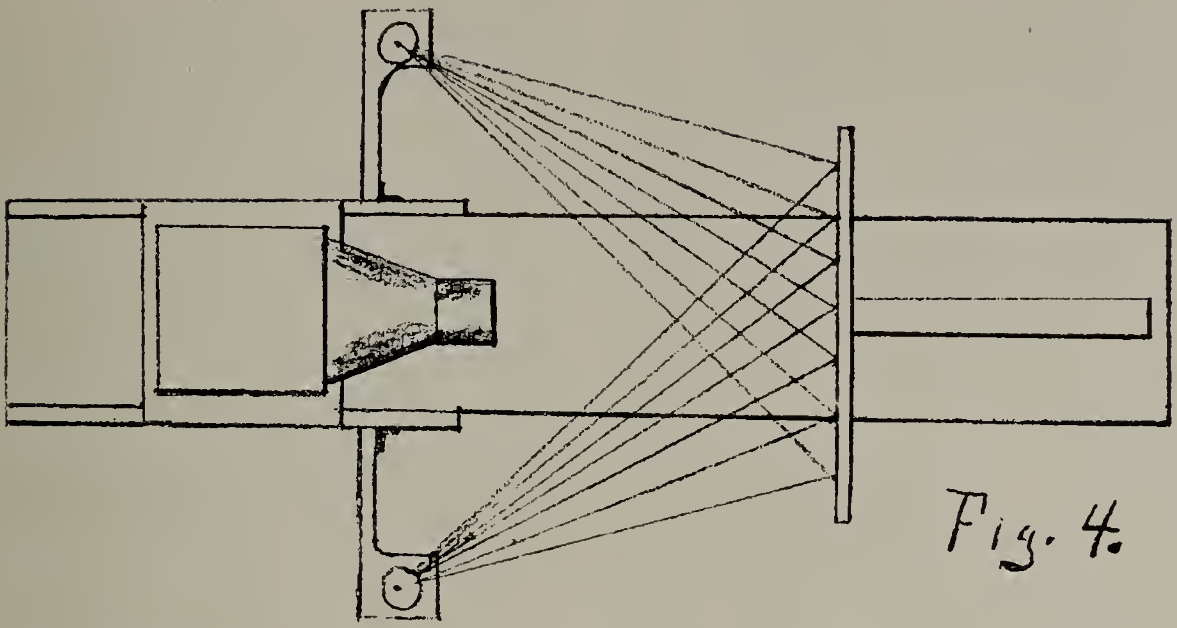


Fig. 4.

dle of the picture over it the image is exactly centered on the ground glass.

While sunlight is doubtless the best source of illumination, it is out of the question for one whose time requires him to do this work in the evening. To secure uniform illumination that can be depended on, the following method, shown in Fig 4, is used.

Two arms, ten inches long, are hinged, one to each side piece B, so that they can be extended as in the figure, or folded around the end of B when not in use. Each arm carries an incandescent lamp with a reflector. A 24 or 32 candle power lamp is best. If the electric light is not available a pair of Welsbach mantle gas lamps will give good results.

With a Bausch and Lomb Zeiss Anastigmat lens, Series VII a, a Cramer Crown plate and diaphragm No. 32 U. S. an exposure of two minutes gives a negative with full detail good contrasts. It not only gives these results but it gives them every time.

To save expense, two plates of lantern slide size can be cut from a 5 x 7 plate and the slide made by direct contact.

I have frequently cut 5 x 7 plates into quarters, each 2½ x 3⅛ and find them plenty large enough for many figures.

THE DURATION OF A FLASH.

BY D. J. MC CARTHY.

WISHING to make some experiments which require a light of high actinic power and of extremely short duration, the writer was led into making some speed tests of various flash light powders, to determine if this method of lighting could be used without resorting to the use of an electric spark.

These speed tests were made by the photographing of a falling body. This method was used in preference to the pendulum as it offers the least chances for error. With a pendulum beating seconds, speeds as high as .01 of a second can be determined within one per cent.; that is, provided the pendulum beats seconds, a condition which is rarely accomplished without the aid of a scientific measuring instrument.

The length of a simple pendulum vibrating seconds at the latitude of New York is 39.1017 inches; but as there can be no so such thing as a simple pendulum, this length will have to be determined in accordance with the materials used in the construction of the pendulum, which is a difficult problem to accomplish with any degree of accuracy, and, as all materials are affected more or less by change of temperature, it is obvious that the length of a compound pendulum will also be affected by becoming longer or shorter as the temperature rises or falls. As the time of vibration varies directly as the square root of the length the percentage of error will become quite appreciable with changes of temperature.

The isochronism of a pendulum should not exceed five degrees; that is, a pendulum of a given length will vibrate in equal times when the angle of the vibrations does not exceed five degrees, two and one-half each side of the vertical.

As the sine of the angle of two and one-half degrees is .04362; on a pendulum of 39.1 inches long, the distance through which it will travel each side of the vertical will be 1.71 inches or a total of 3.42 inches.

This allows of a rather small scale, especially when very short exposures are to be measured.

According to the law of gravitation a falling body travels a distance of 16.08 feet and attains a velocity of 32.16 feet per second, during the interval of one second. This gives a scale of 16.08 feet as against the scale of 3.42 inches given by the pendulum.

The larger the divisions on a scale the more accurate will be the readings. The only error which has to be guarded against in the falling body method of measuring lengths of exposures, is the resistance of the air to the body passing through it. This can be readily overcome by making the body of such dimensions and shape that the air will offer the least resistance

As the resistance of the air varies as the square of the velocity, it would seem that the error due to this resistance would become quite appreciable, but as a matter of fact the resistance to a falling body of one square inch area after falling for one second, is equal to 10 grams, an amount which is practically neglectable on a body of any weight.

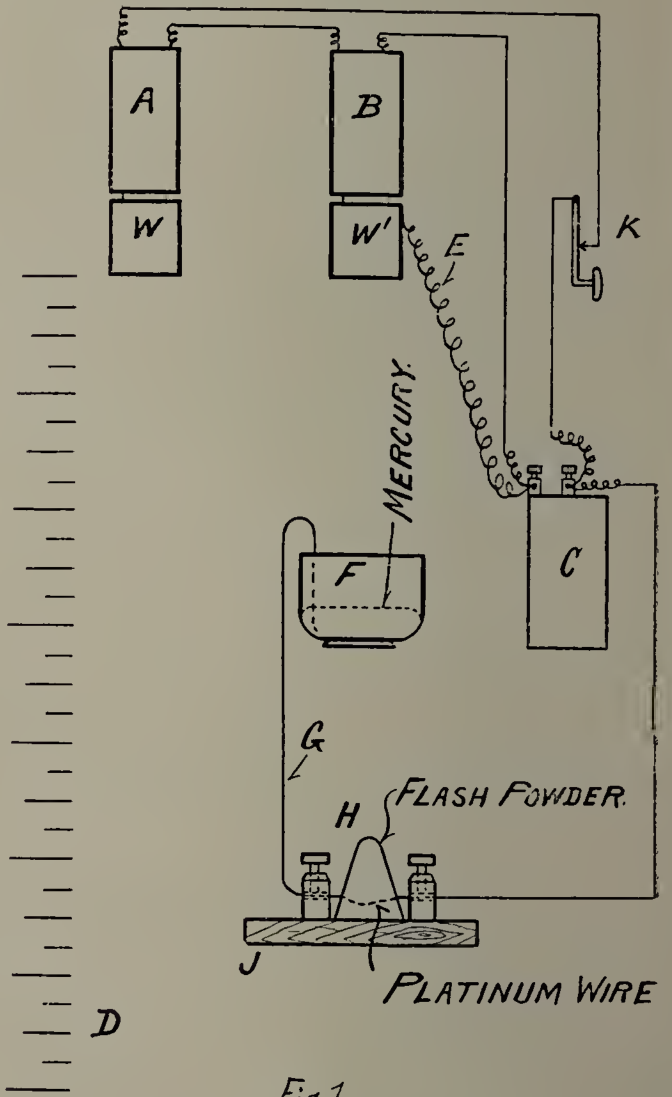


Fig 1.

A diagram of the apparatus used in making the speed tests is shown in Figure 1. A and B are two electro-magnets connected to batteries C. Magnet A was suspended about three feet above a table and in front of a black background on which was laid off, with white ink, the scale D up to two feet, in divisions of inches, each inch being divided into quarters.

W and W' are two pieces of a steel, each one inch square and suspended by the magnets A and B when same are energized.

The magnet B is placed in any convenient place so that the weight W' will have the same range of fall as weight W.

The weight W is the weight that is photographed and the length of exposure is determined by the distance through which it falls during the exposure; this length being given by the divisions on scale D.

As the velocity of a falling body increases with the height of drop, it is obvious that the weight will pass more divisions on the lower part of the scale than on the upper part in a given time, so it is advantageous for short exposures to make the exposures when the weight is near the bottom of the scale. To accomplish this is the object of weight W'. To this weight is attached a fine flexible wire E connecting to battery C. This weight is so suspended by magnet B that when released it will fall into a cup F in the bottom of which is a little mercury. Into this mercury is led the wire G which leads to the binding posts at H. Between these binding posts is placed a fine platinum wire around which the flash light powder under test is placed; so that on the passage of an electric current the wire becomes hot and the powder is ignited.

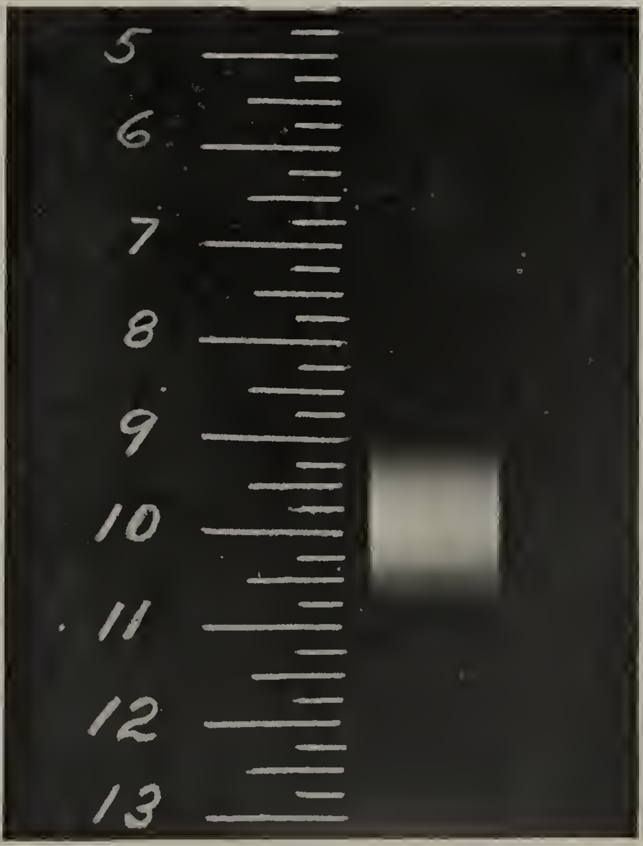
By varying the distance between the weight W' and the mercury in cup F, the weight W can be photographed at any point on the scale D. The speed test is made as follows:

The scale D is focused upon the ground glass so that all or any part of same will be shown on plate. The piece of wood J with binding posts H is placed so that the flash will be in the proper position for photographing weight W.

W and W' are now suspended from magnets A and B; the distance at which it is wished to photograph W on scale D is measured off between the mercury in F and the under part of W'. The flash powder is now placed between post H so that the platinum wire passes through it.

To obtain the quickest combustion the powder should be placed in as small a pile as possible and not spread out.

The magnets A and B are now de-energized by pressing the key K and W and W' being released will fall. When W' comes in contact with the mercury in cup F the flash powder will be ignited and the exposure made.



The results shown in Fig. 2 were obtained from a No. 3 Eastman's Flash Cartridge. In this case the distance between W and the mercury in cup F was nine inches. It will be seen that the exposures started when the top of W was opposite the nine inch division and ended when the bottom part was opposite the ten and three-quarter-division. As W is one inch long, this length must be subtracted from one and three-quarter inches, the apparent distance to get the true distance through which the weight W fell during the exposure. This distance equals three-quarters of an inch.

The formula for falling bodies is $t=\frac{\sqrt{h}}{4.01}$ in which t=time in seconds and h = distance in feet. The time taken to fall nine inches or .75 of a foot is $t=\frac{\sqrt{.75}}{4.01}=0.2159$ seconds, and for nine and three quarter inches or .8 foot is $t=\frac{\sqrt{.8}}{4.01}=0.223$ seconds: so $0.223-0.2159=0.007$ seconds, the duration of the exposure.

The gradual increase in brightness of W is due to the gradual combustion of the flash powder, that is the flash does not reach its fullest actinic power instantly but takes some appreciable time to do so. The flash also gradually dies out which is shown by the gradual fading of intensity on the lower part of W.

By photographing a falling body the speeds of a high shutter can be accurately determined.

Lay off on a black strip of paper, with white ink or paint, (the black paper from a film roll does very well) a scale four feet long, divided into feet and inches, mark plainly each division so that it will show well in the photograph. This scale can be tacked to a board and placed in any convenient place where the light is good.

The falling body should be some bright object, such as a ball painted white; the weight does not matter much, as a light and heavy body falls at the same speed providing the air does not offer a great amount of resistance.

When the scale has been focused in the camera the operator can hold the ball in front of and at the top of the scale with one hand and the shutter bulb with the other. In this way the shutter can be released when the ball is passing any part of the scale.

If after development, it is found that the ball has traveled, say, from the two foot, ten inch division, to the three foot division; the duration of the exposure can be determined by reference to the accompanying table.

HEIGHT IN FEET AND INCHES.	TIME IN SECONDS.	HEIGHT IN FEET AND INCHES.	TIME IN SECONDS.
1	.075	2-1	.360
2	.103	2-2	.364
3	.125	2-3	.371
4	.144	2-4	.382
5	.160	2-5	.389
6	.176	2-6	.397
7	.192	2-7	.403
8	.204	2-8	.410
9	.216	2-9	.413
10	.228	2-10	.422
11	.239	2-11	.425
1-0	.248	3-0	.432
1-1	.259	3-1	.437
1-2	.270	3-2	.444
1-3	.278	3-3	.449
1-4	.288	3-4	.455
1-5	.294	3-5	.461
1-6	.305	3-6	.466
1-7	.313	3-7	.470
1-8	.320	3-8	.477
1 9	.330	3-9	.482
1-10	.336	3-10	.487
1-11	.342	3-11	.493
2-0	.351	4-0	.5

In the column marked *height,* is given the distance in feet and inches corresponding to the scale; the figure opposite in column marked *time,* is the time in seconds required for a body to fall this distance.

Opposite figure 3 in column height will be found the figure .432 in the time column, and opposite 2-10 is the figure .422, the difference between the two numbers found in the time column will be equal to the duration of the exposure in seconds, which in this case, was .01 of a second.

DEVELOPING WITH A WEAK SOLUTION, THEN INTENSIFYING.

BY RICHARD TROTTER JEFFCOTT.

ATTENTION is being constantly called to the fact that tank development is the better method of producing good clean evenly developed negatives. It is readily admitted that followers of this method are on the increase and while the subject is yet in an experimental state yet it is worthy of more than passing interest.

One point, however, is yet to be overcome that is the elimination of the dark room. We are referring to the developing of plates only. Whether the tray or tank method be employed it is necessary to make use of a dark room for a portion or all of the work.

My attention for some time past has been directed to the method of "Developing with a weak solution and then intensifying."

Naturally it is the finished print that interests the public and not the negative therefore the additional work by this method appears only in the effect as produced in the print.

We are prone to under expose and for this reason many fine negatives, if correctly developed, would be of more value than the black and white effects produced—mere contrasts of light and shade without artistic or technical effect.

To follow out the idea correctly and to produce satisfactory results the following data may prove interesting.

Select a fast plate. In timing expose for the shadows. For developer, take the plate makers' formula and dilute it from 6 to 8 times its bulk with water. Naturally in its weak state perfect control is obtained and the evenness of action (chemical) is apparent.

On completion of development we have a negative with all the fine detail in correct proportion but lacking "snap." After fixing, washing, and drying, a print can readily be made showing a "flat" result, but by further employment of this method a wonderful effect is produced.

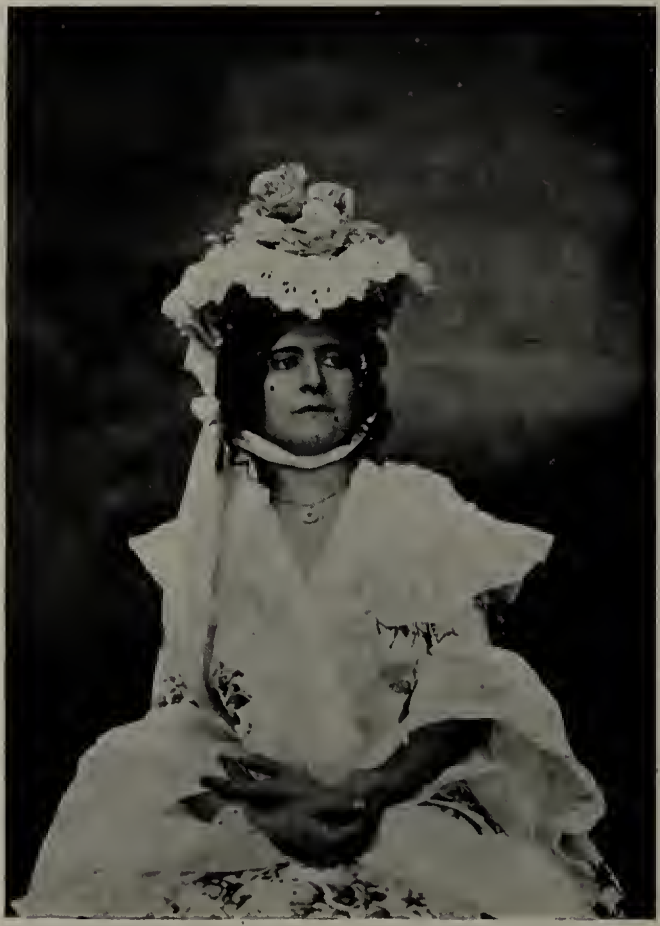
From experiments at hand Motax is probably and by far the ideal intensifier producing the best results at all times. The dry negative is now immersed in a tray of water, after a few minutes the water is poured off and the intensifier applied by pouring it quickly over the entire plate, rocking it evenly. The trained eye readily discerns the proper time of intensification, the plate is now transferred to a tray of "still" water and permitted to remain for several minutes while the "coloring" takes place. The operation is completed by a thorough washing and racked for drying. Another print may now be made and the comparison will readily show that this method is superior in many respects to either tank or normal solution tray development. The accompanying illustrations of "Dolly Varden" will readily show the effect aimed for.

For the information of those desiring to test this method of developing the following details will be of value from an experimental point.

A Series three, number six Goerz lens was used, exposure on a Hammer Blue label plate of four seconds. Metol Hydro Developer and for intensifier Motax was used. (The "Motax" was about two years old showing its wonderful action, even after use several times during that period.) The finished prints were made on Willis & Clements "C. C." Black platinotype paper.

Much of the exquisite detail and softness has been lost owing to the fact that silver prints were required for half tone reproduction.

A word of caution here will not be amiss if it is desired to make platinum prints from your negative any intensifier containing mercury cannot be used.



SOME CHARACTERISTICS OF SPRING LANDSCAPE

BY REV. F. C. LAMBERT, M. A.

THE observant photographer soon learns that each season of the year presents certain broad and general characteristics. Although these are not easy to describe in words, yet they are fairly easy to see when once we know how and where to look for them. But the beginner must not conclude that they are only three or four in number because a few are only mentioned in this note. In truth, not only are they many in number, but also do all the various characters pass by imperceptible steps one into another. Therefore, while we find it convenient to separate them in our mind, for the purpose of study, yet the expression of the face of nature, like that of a human being, depends on the *tout ensemble* rather than any one feature.

COLOUR.

As we pass from cold winter to the warmer days of spring, the first and most welcome change is the gradual introduction of colours in the landscape. The bare, almost black, twigs and branches begin to put forth the green buds, the brown earth puts forth the emerald threads, and the sombre greys and browns of winter pass into various lighter and brighter shades tending towards green. The practical photographer, therefore, takes the hint and loads up his camera or dark slides with colour-sensitive plates which he will use with a suitable colour-screen or filter.

Examine two prints made from negatives taken from the same standpoint and exposed within a minute of each other. The characteristic feature of colour alone is not recorded, but we can see how the colour-sensitive plate gives us far more suggestion of light and shade and of roundness. With the ordinary plate the rendering is flat, cold, grey, "much-of-a-muchness" all over the picture. The other suggests sunlight, relief, and colour.

LIGHT AND SHADE.

Thus we at once learn that the change from the monotonous, colourless garb of winter to the colour-touched effect of early spring extends our range of lights and shades. Following this line of observation, it will be easy to see that our spring pictures will (or should) show more variety of half-tones than those depicting winter scenery. The increasing altitude of the sun will bring stronger high lights, and consequently stronger shades and shadows by comparison.

FORM AND OUTLINE.

Very closely associated with light and shade are form and outline; indeed, our perceptions of form are dependent upon light and shade. Now, as the leafless trees of winter-time put forth buds and greenery the sharp wiry outline or network is changed in character. Not only do we get a general filling up and broadening effect, but also the outlines are softened. Subtle bits of beautiful light and shade are introduced, the grim and gaunt bare skeleton again comes to life, and becomes vastly more interesting and beautiful. In the early stages of spring, while the leaves are small the effect suggested is that of lightness and delicacy, but when the leaves are fully out the forms are bolder in mass and more defined in outline. This difference may help to explain to us why, for painter and photographer, it is far more difficult to get good and true "form" in the early spring than in the leafy summer. The use of a very small stop might be thought the best course to take, but this is not the case For with this enrichment of detail in nature there is at the same time a general softening all over

EFFECT.

If we try to gather up our ideas at this point, we shall see that they will help us to understand something of what painters call effect—*i.e.,* the combined result of several factors acting in concert. Bearing in mind that springtime is the transition period, or link between winter and summer, we find it characterized by great delicacy in several ways. The colours are delicate and tender, clean-looking and fresh, and very welcome to the eye already tired with the sombre hues of winter. The outlines are delicately softened, and, compared with the sharp lines of winter, many outlines are all but lost. The added steps in the scale of light and shade also give interest and delicacy to forms.

The light and gentle winds in the spring call for watchful care—not that the landscapes should always be depicted as if there were no such thing in the world as wind, but that a moment may be chosen for the exposure when a suggestion of gentle wind will aid in softening this or that part. Spring is the time suggestive of the re-birth of the year, and life is in our minds curiously interwoven with the notion of movement. A tree gently swaying in the wind always seems more living than one quite at rest. Hence it is that the "dead-sharp-all-over" landscape is very apt to lack interest as compared with one in which movement of some kind is suggested.

Photographic News.

PRACTICAL HINTS ON PHOTOGRAPHING HEAVY MACHINERY AND ENGINEERING WORK.

BY T. NEWTON ARMSTRONG.

THE preparation of large pieces of machinery for photographing is a very important part of our subject. In all Government work, which, of course, has to undergo a close inspection at the hands of officials, no painting or special preparation is permitted. The natural skin of the metal, either in its rough or finished tooled condition, must be maintained. On the other hand, where ordinary commercial jobs are concerned, many engineers make a rule to bestow a good deal of preparation on their work by painting and hand cleaning, in order that it may be rendered specially suitable for a photograph. Others, again, among whom it may be stated are some of the highest class firms, rigidly set their faces against any special painting being resorted to for photographing purposes, confining their preparation merely to a careful hand cleaning and oiling by means of waste, etc., in any case quite a variety of colours are met with, ranging from black and dark olive green, down to red. Very often these surfaces partake of an enamelled form when cleaned up, and frequently give some trouble when a strong top light has to be utilized.

PREPARING THE SUBJECT.

In cases where painting is permitted, a good dark grey should be employed on such subjects as crank shafts and bright metal objects. The paint should yield a good matt surface when viewed from the standpoint of the camera, and if the job appears patchy, very likely by waiting an hour or so until the paint be quite dry, these patches will disappear. The unhardened paint is easily removed after exposure.

If, as is very often the case, the entire surroundings have to be blocked out on the negative, a colour should be chosen that will permit of the margins of the machine showing a good contrast against the white background of the final print. This applies particularly to small attachments on the outline of the machine, which will not show well unless painted a dark colour.

Another very important matter when painting is performed is to make sure it is done just prior to the photograph being taken, so as to leave no opportunity for markings by the dirty hands of workmen. The lapse of a day or two often means that the job has to be repainted. In the case of inside portions of a machine being painted for the photographer the colour cannot be too white, and frequently great advantage can be gained by painting portions only of a subject, so as to bring up one part from another. White paint is used for this, but much can be done also with chalk.

THE ADVANTAGES OF CHALKING MACHINERY.

In cases where large tools that are in daily use are concerned, painting, of course, is out of the question, but the same may be dressed up in an effective manner by means of a little chalk. First of all, the maker's name, which almost invariably will be found cast, either as a name-plate bolted on, or otherwise cast on some part of the tool, will call for attention. By chalking over the raised letters only and then by means of the ball of the forefinger softening the chalk marks down, the same will be found to stand out in bold relief, and appear very telling in the finished photograph. Other parts amenable to this treatment are the gearing wheels, springs, nuts, and any fine detail found in the dark portion of the object. It is really wonderful how the teeth of a gearing wheel may be made to show up in the finished photograph by means of careful preparation with a little chalk. A typical case may be mentioned. Since the application of electricity as a motive force to large lathes, etc., these gearing wheels form a very prominent part of the machine, and in some of the newest patterns are enclosed in casings or covers, and sometimes it is desired to photograph portions inside such casings without removing the entire cover, or at least, to do so by means of the cover door being open. By chalking the parts that just appear through the open door they at once come into view, and show up well in detail in the finished photograph, otherwise they would not appear at all, being simply buried in darkness. In cases also where outlines of portions of a tool are backed up with other dark parts, and therefore do not appear with enough contrast, much may be done by chalking the edges, so that they appear with a light line against a dark background. The lighting of the machines has often to be taken as it is found by the photographer, yet it is often possible to counterbalance the excess of top light (a usual defect) by making the ground into a reflector, as the writer remembers doing on one occasion, by having a concrete floor whitewashed, and so obtaining the detail in a machine, the projecting top rail of which cast a shadow over it. Similarly white washing all round a stationary engine will do a lot in the way of helping matters. In some instances very dark portions in large machines can be lighted by means of small electric lamps being placed so that the light is thrown on the parts it is desired to illuminate, the lamp, of course, being out of view. As a rule, such aids are but of low value, and require lengthy exposures, the light being very deceptive in its actinic value. The writer has also seen magnesium powder, with which a few grains of gunpowder was incorporated, prove of great service in lighting up hidden or dark recesses in heavy machinery; this, of course, requires to be burned in an open pan, simply igniting same with a smoker's vesuvian, stuck in the cleft of a long stick.

It often happens that makers desire a photograph of their tools as soon as possible after they are fitted up in some new shop, and before the flooring or other parts of the surroundings are in their finished condition. When this happens it is best to block out the entire floor space in the negative and print the same with a white floor, then sun down the whole portions and tone and fix as usual, and when the print is dry, by means of a parallel ruler, draw on the face of the print flag stones by means of cross lines at their proper angles. This looks well, and after the print is carefully doctored, the same is rephotographed. By this means nasty eyesores are got rid of. As to the method of working up the face of the print, the writer hopes to refer later on.

PREPARING ROUGH CASTINGS FOR PHOTOGRAPHY.

The preparation of large steel castings for the purpose of being photographed differs materially from that of ordinary finished machinery. Such pieces are often met with of great weight, in some cases running as high as forty tons, and varying in shape and dimensions after these pass through the dressing shop. They are generally photographed without any painting. In this condition the pieces are likely to appear somewhat patchy, and show an abundance of chisel marks from the hands of the dressers. In the rough casting these marks will very likely, at certain angles of lighting, present a bright silvery appearance, quite unlike the dull grey look of the rest of the piece, whilst in other portions large patches of darker coloured metal will almost be sure to be present.

The writer knows of no better method of getting rid of these markings and eyesores than by forcibly throwing or dusting the moulder's sand on such parts as require to be doctored. In all dressing shops these castings will be found simply smothered in such sand, so there is no lack of supply. After the dry sand is forcibly thrown upon the parts the surface is gently dusted over with a little dry waste, and immediately a practised eye will be satisfied with the improvement effected. Bright glaring chisel marks will be seen to disappear, and large patches of dark metalic appearance will show up as grey as the rest of the piece. In all rough castings, even at the stage where such leave the dressers hands, there will be on the surface small holes or indents which appear in exaggerated form under side lighting. It is always advisable to doctor the more pronounced of them before exposing the plate. For this nothing is better than a little moulder's putty, which, when applied to fill up these little holes, may at first show up as dark dots against the light grey colour of the casting; but another few handfuls of dry moulder's sand thrown forcibly on them soon make them vanish.

In nearly all marine engineering castings there will be found large and small apertures with sharp edges. All moulders like these lines or sharp edges to be well shown in the photograph, a great aid being to "dress" the castings before hand with chalk, as before stated, and then the lines can be either intensified on the negative or on the print. With too much front or too low a light these apertures will often show a lack of shadow, and tend to spoil the solidity of the piece. The natural remedy is to select a better lighting, but where this cannot be done an immense amount can be put in on the print. The photographer of machines soon finds that he must use brush and air-brush in the perfection of his work.

PREVENTIVES OF HALATION.

Halation will often be found difficult to prevent, especially when working right up against a strong light. If the subject be situated and a fixture under the worst possible conditions, it is often best to blind off the window with brown paper. This can be had in web of almost any size and shape, so as to cover all the glass, and in such cases the negative will require to be carefully treated and blocked out. Other cases where bad lights are situated at long distances in front can generally be treated in some way or other by boarding up or hanging shields from a crane, etc., so that the evil is prevented. Prevention is always better than cure, and much may be done by choosing the hour for exposure when the direct light is not present. As to backing the plate, the writer's experience is that bitumen dissolved in chloroform is the best to employ, and when this is used the plate is developed without previously removing the backing. A little practice will soon make a regular worker quite at home in developing after this method.

The working up of the print preparatory to rephotographing it is perhaps the most difficult of all operations connected with this class of work. It takes some experience to be an adept at it, but the air-brush has placed a new power in the photographer's hands, and all high-class block makers know the value to place upon such method of working up a photograph. No doubt quite a lot can be done by the brush alone, but for really high-class finish on highly glazed prints, which are so much in request for fine detail in process work, only the best results can be obtained by an expert in the use of the air-brush.

—*British Journal of Photography.*

THE VALUE OF HALF-TONE.

A NOTE ON THE IMPORTANCE OF GOOD GRADATION.

PROMINENT amongst the aims of the amateur, particularly the young amateur, is the production of "plucky" negatives. This is a very praiseworthy object, but we are led to believe that some confusion exists as to the nature of this pluckiness. It has been the writer's lot to inspect some thousands of amateur's prints, and judging by many of them, conscientious efforts to secure vigour very often produce harshness. If your picture contains perpendicular lines of masses set off abruptly against curved lines or masses; or if a hard and definite line is perceptible between blacks and whites a crude and harsh picture often results.

Sudden and dramatic contrasts have their place as an element of pictorial composition. It is well known that some very striking effects may be obtained when the highest light and greatest shade are in justaposition; but it is an expedient which may, in weak and inexperienced hands, produce very crude and ridiculous results.

In some of Nature's most charming aspects the highest lights and the shadows are connected by a series of intermediate gradations. And the painter artist who wishes to give character to his work by the introduction of a strong high-light often takes pains to conceal the artifice by bridging over the gulf between light and shade by a series of gradations of colour. Thus, while we are influenced by the presence of the high-light, we fail to perceive that it is introduced of set purpose. Had the artist failed to lead us by successive steps from deep shadow to pronounced high-light, we should have been more likely to detect the artifice. What gradations of colour do in the artist's picture, delicate tones must do in the photographer's work of art. Well rendered, these half-tones need not detract from the pluckiness of the result, but their absence may involve us in a most repulsive and unnatural harshness.

It is within the power of the painter to mingle his colours according to the dictates of a highly trained faculty. But nature herself seems bent upon frustrating the photographer's efforts. For a landscape may be flooded with a most seductive light, and yet the colours of flowers and foliage may combine to defeat any attempt at accurate rendering of gradations. Orthochromatic plates aid and screens will do much to help us over the difficulty, but in the majority of cases there will remain defects which the photographer must remedy by retouching. Close observation of the actual subject photographed is necessary, and then any false gradation in the negative should be rectified so as to be brought into correct relationship with the rest of the picture. If amateurs would pay a little more attention to the retouching of their landscape negatives, we should see fewer harsh prints. It is a mistake to suppose that a landscape negative will give a perfect straight print without retouching; some softening of excessive contrast is almost invariably required. Observe closely the subtle gradations in nature, and then critically examine some of your crude prints; it will be a salutary exercise.—*Focus.*

WRINKLES

BY AN OLD STAGER.

THERE are two things that compel the hand camera user to give short exposures—movement of the subject and movement of the camera. The first he cannot control, the second is largely in his own hands in more senses than one. Few of the people we see about at seaside places and holiday resorts seem to appreciate the fact that the most convenient way of holding the camera so as to see the image on the finder is not the best way in other respects.

STRAIN REALLY MEANS UNSTEADINESS.

The plan of holding the hand camera at one side is not conducive to steadiness, as the body has to be thrown into a constrained position to see the finder at all. In the same way, if we hold it straight in front of us and stoop over it, steadiness is sacrificed. If we take the trouble to get someone to stand in either position with his head near a fixed object, say a gas bracket, so that its slightest movement can be noticed, it will be seen that anyone in a position involving strain is not quite still, but is unconsciously and slightly see-sawing backwards and forwards. Such a movement may be very slight, but it will be sufficient to prevent slow hand exposures. I might here add that what follows refers in the main to to the slower exposures, say from a fourth to a tenth of a second, which many people find so hard, yet which are often demanded by the best and most difficult hand camera subjects.

CREDIT WHERE CREDIT IS DUE.

By the way, how many hand camera workers amongst my readers have realized that flying trains, diving men, and skipping girls do not form the hardest but some of the easiest hand camera subjects. Of course they call for a rapid lens and plate and a focal plane shutter but at the best they are triumphs of apparatus, not of the photographer. The man who can get a good natural photograph of a street scene, well exposed, yet without the figures appearing as if petrified in the midst of some ridiculous dance, has done a more creditable feat than he who turns a twenty-guinea camera at a flying motor car and catches it in the thousandth of a second. The latter is a feat, but the credit should go to other people than the man who made the exposure.

THE STEADIEST POSITION OF ALL

To resume. The steadiest position of all is to put the camera firmly against the body, just above the waist, stand fair and square on the feet in that position, and then to bend the head rather than the body and head together to see the finder. Such instructions can easily be caricatured, and I don't advise any photographer to carry them out so literally as to make himself look like one of E. T. Reed's pictures from "Punch," but only put them forward to suggest, generally, the best position.

THE GREAT THING IS TO BE EASY.

The great thing is to avoid strain. Having once put the feet down, any considerable movement of the body alters the position of the centre of gravity, and so may bring strain on the feet and ankles which may make the pose an unsteady one; and for that reason, I should say, the head rather than the whole body should be bent. The great thing is to be easy. The easy position is the steadiest one.

EVERY LITTLE HELPS.

Hand camera users should never despise other aids to steadiness, if they are to be had. Leaning up against a tree or wall means that two or three times longer exposure can be given than would otherwise be possible without any sign of movement of the camera. This is often possible when the camera itself cannot be put on the tree or wall as a support. An umbrella or walking stick into the ground, or even merely stood upright upon it, makes a very useful prop for the camera at times.

BUT MAKE SURE IT IS STEADY.

When any support of this kind is made use of, it ought to be unnecessary to point out that one should make sure that it is steady. I have known a wall that was anything but a fixture, in consequence of machinery in motion attached to it, and I once had quite a number of photographs spoilt because the camera, instead of being held in the hand, was placed firmly on the taffrail of a steamer, and so was in a constant state of vibration. Snap shots made the same day with the camera held in the hand showed no trace of movement, proving that the body of the writer acted as a spring or buffer, and absorbed the tremors of the ship instead of communicating them to the camera

THE BALL AND TUBE ARE NOT WANTED.

Then again, the way the shutter is let off makes a lot of difference. The pneumatic release is an excellent device when the camera is on a stand, since it prevents any movement of the photographer from being conveyed to the apparatus; but a wrinkle worth noting is not to use the ball and tube whenever the camera is held in the hand, but to press the button or lever or whatever it is. The reason is plain enough. As the camera is being held, if the photographer moves at all he must move the camera, tube or no tube; therefore he wants to move as little as possible. Now, it takes much more muscular action to squeeze the pneumatic bulb so as to release the shutter than it does to press the button, and, in fact, the squeezing of the bulb may cause the camera to move just when its steadiness is most important. On a stand the jerk is lost in the tube, and the camera is not moved; but in the hand there are other connections between the photographer and the camera than merely the tube, so that the jerk is conveyed. Discard the tube and ball, then, so long as the camera is to be used in the hand.

WEIGHT IS IMPORTANT.

The weight of a camera plays quite a large part in its steadiness. Within reasonable limits, the heavier the camera the less likely is it to be shaken by the pressing of the button. It is not really hard to hold a featherweight camera quite still, but it seems hard to anyone who goes straight to it from using a substantial instrument weighing perhaps four or five times as much. The weight of the moving parts is also a factor. The heavier they are the more chances are there of shake. That is what makes a reflector camera so difficult to some people. The weight of the mirror causes them to jerk the camera just when steadiness is all important. On the other hand, an apparent, or even a visible, jerk caused by the shutter stopping suddenly when the exposure is over may seem as if it must cause movement, but, of course, does so when movement is quite harmless.

UNCONSCIOUS MUSCULAR JERKS.

Another wrinkle, and I have done for this week. Look out for involuntary movements. I once knew a photographer who gripped his teeth together when he pressed the button. He was not aware of it, but he gave himself a kind of muscular jerk, which was communicated to the camera every time.

—*Photography.*

A WINTER SCENE *By Belle Johnson*

Book Reviews

Die Verwendung des Zinks fur den lithographischen Druck, 15 figures, 1906 by C. Blecher, published by Wilhelm Knapp, Halle a. s. Germany, Price Mk. 2.0. The method of using zinc sheet) for lithographic purposes as indicated in this book is one discovered by Dr. Strecker. The use of sheet metal in place of the heavy, cumbersome and expensive stone is not new, we have used sheet aluminum in this country for some years. Another advantage is that sheet metal can be used on rotary presses for rapid printing. In regards to presses, it is of interest to note that a certain American-made press is given the preference in this book on account of its adaptability and qualities.

* * * *

"La Photographie du Nu," by C. Klary, Paris, France. Price $2.00, post paid. This is the seventh edition of this excellent work, which treats in an admirable manner of one of the most difficult phases of photography. The book is illustrated with one hundred nude photographic studies, which are handled with delicacy and a proper understanding of artistic requirements.

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Die Tonungsverfahren von Entwicklungs-papieren by Dr. E. Sedlaczek, 1906. Published by Wilhelm Knapp, Halle a. s. Germany, Price Mk. 4.0. The fact that developing papers lend themselves so readily to being toned to many colors will come as a surprise to those who only know prints on these papers in black and white (and sometimes in disagreeable shades.) The amount of work accomplished in this line by Dr. Sedlaczek is remarkable, it fills a book of 156 pages, divided into three sections, theoretical, scientific—experimental, and practical. The author claims that he has published only those formulas which he found to work well.

* * * *

Aide-Memoir de Photographie, 1906 by C. Fabre, Published by Gauthier Villars, 55 Quai des Augustins, Paris. Price 1 Fr. 75 cents. The French photographers in common with those of other great nations have their annual. In size it is smaller than the annuals we are familiar with which makes it very convenient to carry on picture trips. It contains about 350 pages which are crammed full of interesting information. The language is quite simple, so that those possessing only a slight reading knowledge of French will be enabled to understand it. It is interesting to know how the French do things photographic.

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Les Procedes d'Art en Photographie by R. Demachy and C. Puyo. Published by Photo-Club de Paris. This handsome quarto volume of one hundred and seventy pages, is most carefully arranged and beautifully illustrated with over forty illustrations from the works of the authors, and other famous photographers. It contains an account of the progress during the past decade of those processes under the personal control of the photographer, as Ozotype, Gum-Bichromate, Rawlins oil painting and platinotype by glycerine development. A very large portion of the book is given up to gum printing in which process Messrs. Demachy and Puyo have accomplished such superb results. It is unfortunate that as it is published in French the book is not available to many American makers.

Notes, News and Extracts

One of the Greatest Achievements of Photography in America.—At Winona Lake, Indiana, one of America's greatest Chatauqua Assemblies, a building has been erected by photographers, known as the *Daguerre Memorial Institute,* and dedicated to M. M. Daguerre, who presented photography to the world. This is perhaps the first and only building known to have been erected in the interests of professional photography, wherein a permanent Salon and photographic museum have been established and maintained. Several thousand dollars worth of pictures are now hung upon its walls, and its future only bids a higher honor for the profession as an art, as a science, and as an industry.

This is not only a monumental building for the professional photographer, but its greater fame is intended to be one of acknowledged merit and general publicity, and to assist in raising the moral, educational and professional standard to a higher plane, and ultimately encourage the organization of other institutes of a similar character. It is the beginning of a new era in the advancement of photography. It is building a character for the future of the profession.

The managers of this institute have resolved that the highest honors possible be given to the works of the masters; that they be rewarded for their love and labor, they have decreed to award a *diamond medal* for the best picture hung at their annual exhibit July 8-12, 1907. This medal will be known as the *Diamond Medal of Honor* and will bear an inscription of the title of the picture for which it was awarded, and the name of the institute by which it was given. The picture receiving this honor shall be hung in the salon as a permanent exhibit, its award to be inscribed thereon with date and name of maker, and all honor possible be ascribed thereto.

In addition to the "Diamond Medal of Honor," the Photographers Association of Indiana have decreed to award a gold, silver and bronze medal, to the pictures which are chosen as second, third, and fourth in merit respectively. Pictures winning these honors shall be hung in the salon as a permanent exhibit. In addition to the medals awarded, pictures which may be chosen as worthy of being hung in the Salon as a temporary exhibit, will be awarded by the Daguerre Memorial Institute a certificate of special distinction.

Conditions of Award. Honors are open to the world. Indiana only excepted.

There will be no entrance fee. No restriction as to when negative was made; of any size, framed or unframed. The only qualifications required is *picture must have title,* as same will be catalogued and known in the future by title and maker. No photographer a resident of the State of Indiana will be entitled to enter for the honors as given in 1907. Transportation charges must be paid or pictures will not be accepted. Pictures to be addressed to H. E. Houck, Winona Lake, Ind., care of Indiana Association of Photographers, and must reach Winona Lake not later than July 3rd, 1907. For further particulars, address, Geo. J. Parrott, Ft. Wayne, Ind.; Geo. G. Holloway, Terra Haute; C. W. Neiswanger, Muncie, Ind., Trustees Daguerre Memorial Institute.

* * * *

Is a Lantern Slide a Work of Art?—The question has been debated, says a writer in the *Dundee Telegraph,* and claims made for the slide have been vehemently opposed. How this should be it is difficult to understand, for it would naturally be supposed that the composition and chiaroscuro which make a print a work of art would naturally endow a slide made from the same negative with a like quality. It often happens, however, that a worker in quest of brilliancy is led into falsifying the tone values of the transparency, and turning out slides deficient in half-tone. The usual commercial slide, with hard black and white landscape and bald-headed skies, is a thing to be avoided. The perfect slide should possess deep but clear shadows and high lights, which are never absolutely devoid of detail, with every possible range of gradation between the two extremes.

The Annual Meeting of the Board of Governors of the American Federation of Photographic Societies was held in the rooms of the Pittsburg Press Club on March 20th, 1907.

One motion in which was embodied the decision to abolish the present classification of clubs, to fix the dues of all clubs at $60 per annum, and to divide the express charges of the traveling expenses of future Salons pro rata among the clubs holding the same, contained sufficient matter to considerably change the policy of the organization and caused a good deal of discussion, but was finally unanimously adopted. Heretofore there have been three classes of clubs paying three different amounts of dues and entitled to different privileges. The passing of the motion puts all upon an equal footing and does away with the minor exhibitions, leaving these to the management of the various clubs, and will simplify work at Federation headquarters.

The only other change in policy was the abolishment of the prize system which existed in the purchase of pictures chosen by the jury. Hereafter the Federation will purchase no pictures and offer no prizes of any kind.

The President was authorized to appoint a committee to be known as the Publishing and Publicity Committee, whose duties will be to print and distribute all Federation literature and to furnish the photographic magazines and other sources of publicity with news and any other interesting reading matter, pictures, etc., which might tend to attract the attention of the public to the Federation and its work.

The report of Treasurer Phillips showed the Federation to be in good financial condition with all bills paid and $360.05 in the treasury.

Mr. W. E. Strayer, of Wilkinsburg, was appointed Secretary to fill the unexpired term of Paul H. Reilly, resigned.

The following preliminary jury for the 4th Salon was elected: Wm. H. Zerbe, Wm. T. Knox, Frank G. Wood, Dwight A. Davis, Wm. H. Phillips, John Chislett, H. W. Minns, W. S. Cline, R. E. Weeks, D. H. Brookins, R. L. Wadhams, B. L. Sleeth, Jr.

Preparatory work on the 4th American Salon will now be immediately taken up.

W. E. Strayer, Chairman of Publishing Committee, 1120 Wood Street Wilkinsburg, Pa.

* * * *

A Ferri-cyanide Reducer that Will Keep.—The well known Farmer reducer, made by adding ferricyanide of potash to a "hypo" solution, rapidly loses its activity, and must always be prepared fresh for use. In the *Photographische Rundschau,* F. Hansen recommends the use of Pinakolsalt-N. This is the sodium salt of amido-acetic acid, supplied commercially in 20 per cent. solution under the above name. To make a well-keeping reducer, about a quarter of an oz. of ferricyanide is dissolved in two fluid ounces of the Pinakolsalt solution, and kept in a well-stoppered bottle. For use, this solution can be diluted some three to eight times; its action is the same as that of Farmer's solution, the first attack being upon the shadows. To remove any slight veil after use, the plates are fixed again in an acid fixing bath and well washed.

* * * *

The Single Combination.—A symmetrical lens, enabling one to use either the two combinations together or one only is a great convenience. But many possessors of these lenses have trouble until they learn the enormous amount of difference in the stop values when using the single lens as compared with the complete lens. For instance, if the complete lens works at F8 and an exposure of 1/10th of a second is correct, the worker will make a great mistake if he gives that exposure for the same subject under the same conditions, using the same aperture with the single lens. For when using the single lens, which in symmetrical lenses has a focal length double the complete lens, the value of F8 is F16, and the exposure needs to be quadrupled, i, e., in the instance given 2/5th second would be necessary. Small stops, by cutting off some of the light, reduce the rapidity of the lens, and F16 is a comparatively small stop; hence the single component is slower than the complete lens system, although the diameter of the diaphragm may remain the same.

* * * *

A Trimming Slab.—Some workers find considerable difficulty in trimming their prints so that the corners are rectangular. A simple method of securing this is to use a piece of plate-glass as a cutting slab. On the underneath side of the plate-glass, a piece of white paper, having strong black lines ruled at right angles, should be pasted. The lines can be ruled so as to form a series of squares similar to the lines ruled on an enlarging easel. By bringing the side of the print into the line with one of the lines on the slab, the top may be cut perfectly straight by laying the rule or straight-edge along the line running at right angles to it.

* * * *

HYDROQUINONE DEVELOPER.

(1 and 2)—	Sodium sulphite	400 gr.
	Distilled water	10 oz.
	Quinol	40 gr.
	Sodium carbonate	400 gr.

For gaslight papers use without dilution. Add an equal bulk of water for plates, and a double bulk for lantern slides and bromide paper.

* * * *

PHOTOGRAPHIC COMPETITIONS AT THE JAMESTOWN EXPOSITION.—Many of our readers will be pleased to learn of a series of aerial photographic competitions to be given under the management of the Jamestown Aeronautical Congress.

Special Regulations for the Photographic Competitions:

I.

The Photographic Competitions will be as follows:

No. 1.—Competition for the best series of photographs taken from balloons or kites for topographical purposes.

No. 2.—Competition for the best series of photographs of meteorological phenomena.

No. 3.—Competition for the best series of photographs of balloons, airships, aeroplanes, etc.

II.

Conditions of Competitions:

The prize will be awarded the best individual photographs and to that series of photographs which the Committee considers the best for intrinsic worth and scientific interest.

III.

The photographs must be sent numbered, each set separate and each package shall bear a list of the photographs it contains with a description of the subject.

IV.

Applications.—The applications, separate for each competition shall reach the Committee before the 26th day of April, 1907.

Documents.—The applications sent to the Committee shall comprise:

1st.—A list identical to the one described in part III.

2d.—Detailed description of means and conditions in which the photographs were obtained (camera objective, diagram focal length, exposure,, plates, light, process of development and copying.

Should the competitors have used different apparatuses a detailed description of these with explanatory drawings and photos will be necessary.

3d.—In the case of competition No. 1 a detailed description of the balloon or kite employed to hoist the apparatus will be necessary with a description of the latter and details of height, winds, etc.

Rules and Regulations governing the Camera and Kite, or Camera and Balloon photographic Competition, as follows:

1.—A special award will be made for the best system of lifting and manipulating cameras from small balloons or kites.

2.—In this competition the prize will be awarded to that system of Camera and Kites, or of Camera and Balloons, that on October 26th, and at the hour fixed by the Committee will have from an altitude determined by the contestant or contestants, taken one (1) or a series of photographs, of a predetermined point or locality on the earth's surface.

3.—The contestants will furnish all materials, including those necessary for ascending and descending manoeuvres.

4.—The competitive trials are to last at least one (1) hour.

The managers of these competitions are desirous of obtaining as large a display as possible. All photographers interested in this phase of photography are therefore cordially invited to participate. Gold, Silver and Bronze medals will be awarded for the best exhibits, and commemorative medals will be given to all who take part. Further information will be gladly furnished on application to Israel Ludlow, Supt. of Aëronautical Bureau, 12 East 42d street, New York City.

* * * *

A DIFFERENCE BETWEEN TWO POPULAR REDUCERS.—Dr. Schaffer has carried out photomicroscopic researches on sections of negative films reduced with the Howard Farmer solution ("hypo" with potassium ferricyanide) and ammonium persulphate respectively. He finds that the Howard Farmer solution first dissolves away the granules of silver from the outer surface, and acts by entirely removing layer by layer of granules, the end result being that a lower stratum of granules having normal or full size is left. Ammonium persulphate, on the other hand, does not remove the top layer of granules, but acts all through the film by reducing the size of all granules. Hence it may be that a negative considerably reduced by the Howard Farmer solution may appear to have a coarser texture than a similar negative reduced by ammonium persulphate.

Chicago Camera Club.—North Western University Building, Bulletin, April, 1907.

April 4th.—Set of Interchange Slides and Test Night for members' new slides.

It is strongly urged that our members begin now to make up their slides for the box we must furnish to Interchange this year.

By beginning this early, we will have an opportunity to work up our slides, thereby enabling us to have an especially fine lot.

April 11th.—Demonstration of Artura Paper by the Manufacturers. We have been glad to favor manufacturers of supplies for our work in the past. We feel that by so doing our members are given a thorough knowledge of the many different papers, etc., on the market, and can thereby judge for themselves as to the merits of each.

April 18th.—Exhibit, for this evening only of Portrait Work by our members. It is hoped that every member will bring with him, some of his work in this line. In this connection Mr. Hale will give a demonstration of Negative Retouching. We will try to arrange to have prints made from negatives before and after retouching.

April 25th.—Talk on Composition by Mr. Walter Marshall Clute of the Art Institute. Mr. Clute, and his very interesting and instructive talks are so well known to most of our members, that the mention of his appearance is sufficient to insure a goodly attendance.

Our Directors have been pleased to receive several applications lately, but in order to properly conduct the affairs of our Club, we should have a membership of at least 100. You must know some good man who is more or less interested in photography, who would come in if sufficiently urged. We need him, so get after him. Clarence B. Hale, Secretary.

* * * *

Copying Printed Matter and Manuscript.—A writer in one of the German papers suggests the following method for copying manuscripts or books. The object to be copied is placed face up on a table, and above it at an angle of 45 deg. is placed an ordinary bedroom looking glass, and the reflection in this is focussed in the ordinary way. Instead of using plates, a smooth surface bromide or negative paper should be used, and the result will be obviously white letters on a black ground, and if exposure and development are properly carried out, they will be as legible as black, on white, and there is no need to make a further print.

A Plea for the Vignetted Landscape Photograph.—The vignette in pictorial photography is seldom seen nowadays. Dr. Emerson dealt it one of his swinging blows some twenty years ago, and it has not yet recovered. "Whoever introduced the practice of vignetting," he wrote in "Naturalistic Photography," "was no artist, and the 'dodge' was evolved from a misconception of the aims of art, or for commercial purposes." Later on, he says, "Let them (vignettes) not be called works of art, for, on the contrary, they are certain indices of bad taste." The attack certainly told, and we rarely now find a vignette in a photographic exhibition, although indications are not wanting that taste may be turning.

A sign of the times is to be found in an article on "vignetting landscapes," which Mr. John Bartlett contributes to the "Journal of the Photographic Society of Philadelphia.." In it he tells how one cannot help wondering why the votaries of harmony in mounting feel satisfied in confining their pictures "close up" and without any margin to the abrupt four rigid containing lines of the square frame. If harmony is the aim, he asks, why should the conception be brought so suddenly to a short stop? Hard lines are always condemned by the art critic, yet they never seem to be annoyed much by these hardest of all possible lines. Our eyes are so enslaved with the bondage of the square limitation that we prefer looking at a natural landscape through some such boundary. Our views of nature are not so presented. Our vision is not bounded by any definite limitations but, gradually, all around fades off into a pleasant indistinctness.

We are all so prone to look for painters' pictorial conceptions in Nature instead of learning directly from Nature. "Photographers," says Mr. Bartlett, "are the ever-ready slaves to the conventionalities of art, and the square mount with its rigid edges is their especial delight. But not content with this bondage, they impose upon themselves additional servitude. Lantern slides must be constrained to fit the regulation size mask, notwithstanding the injury that may occur to the beauty of the scene.

If they only knew the charm given to a landscape by vignetting the method would surely be more practised. Any one of taste must acknowledge that often a well-chosen view loses much of its charm by paying too much rent for the hard rigid lines of its surroundings. The vision comes to a sudden and therefore unpleasant stop when it reaches these barriers. How much more pleasant to allow the éye to wander off indefinitely, just as it does in the unconfined scene in Nature. It is only because we are so accustomed to see the photograph set round by lines and angles of the ground-glass screen of the camera, and because, too, we think Art so directs, that we take for granted that the parallelogram is the thing to chain our conceptions of composition.

Not only does the vignetting of landscapes add much to their æsthetic value, contends Mr. Bartlett, but it may sometimes be employed to improve an indifferent picture. Sometimes unavoidable straight lines crop out prominently in a scene near the margins of the picture, such as lines of buildings, unsightly fences, etc. Such objectionable features can be kept from trespass by means of vignetting devices.

* * * *

Protecting the Clothes. A Matter of Every-day Economy.—There is one matter of economy in photography which I never see alluded to in the photographic journals; yet I have found attention to it make a considerable difference, indirectly, in the cost of my hobby. I refer to the protection of the clothes from the different solutions. It is all very well to say, as some do, that photographic operations should only be conducted in clothes that have got beyond the point at which any chemical could affect their value, unless it destroyed them altogether. But this is not always possible.

An apron is a first necessity, and it should be a macintosh one, with a macintosh bib covering the chest fully. My own has a loop of elastic to slip over the head, and so do away with the awkward "doing up" which some aprons need. All protection of this kind should slip on and off with a minimum of trouble, so that they shall offer no temptation to the photographer to do without them, even if he is only going to be in the dark room for a minute or two; because *that* is just the opportunity that a drop of developer or backing or something has been waiting for. It must not be given a chance. Aprons of ordinary non-waterproof material are of little use in protecting the clothes.

The only other safeguards are a couple of those excellent things "artists' sleeves" or "cuff protectors." These also should be waterproof, and should have elastic at each end, and attention should be given particularly to that which clasps the wrist, to see that it is not too tight, as if it is, it will soon become irritating and annoying, and this may lead one to do without it, a thing that will afterwards most likely be regretted.

* * * *

A Lantern Feat.—I have worked the lantern now for a good many exhibitions, and have suffered, I suppose, from the usual run of long-winded chairmen, nervous and cranky lecturers, and all the rest of them (but the other night I heard the audience solemnly assured that I had performed an act unparalleled in the history of lime-light entertainments.

I had not been having a very good time. The speaker was very prosy; he was not used to lecturing "to the accompaniment of slides," as he expressed it; he would keep switching on the signal light, and leave it on so that I had to interrupt him repeatedly, to ask him to switch it off again, while, to add to my unhappy lot, the cylinder leaked at the valve spindle, and I every moment expected a shortage of gas. The slides, too, were awful—hopelessly dense and fuzzy. However, nothing dreadful happened, and I was amply rewarded for my trouble by hearing the chairman, in coupling my name with the vote of thanks to the lecturer, say the gratitude of those present was due to me "for having thrown so many excellent plates upon the platform."

* * * *

Mounting Lantern Slides Quickly.—This is how a commercial slide-maker finished off a big batch of slides with surprising ease and speed, as described by "J. M. B." in the *Pall Mall Gazette*: The strips used were linen ones, of the kind usually sold ready gummed, the slides having to stand considerable wear and tear. As the adhesive is often scarcely strong enough, however, he was moistening them with strong gum solution. Each strip was long enough to go all round the slide, and was laid out straight on a soft pad of blotting paper. The slide having been correctly adjusted with mask and cover glass, was held vertically and pressed carefully on one end of the binding strip. The slide could then be turned over and over until the strip went right round. The corners were then neatly cut off with very sharp scissors, and nothing was left to be done save to press down the sides of the strip on to the slide and cover glass with finger and thumb. The whole operation took a few seconds, says "J. M. B.," and the binding was remarkably neat and firm.

Trade Notes

The Anthony & Scovill Co. announce that their New York office now occupies the entire second floor of the building at No. 40 East 21st street, between Broadway and Fourth avenue, where a complete sample line of their photographic staples and specialities will be carried in stock for the inspection of their customers. They will also carry in stock for delivery Ansco Cameras, Ansco Films and Cyko Paper to assist dealers in filling orders promptly for these popular goods.

* * * *

The First Aristo School of Photography Held in New York April 2nd, 3rd, 4th, the evening of the 4th and April 5th, under the supervision of Geo. Murphy, Inc., we are advised was a decided success. During the four days and evening session 900 photographers were in attendance, and represented the States of Massachusetts, Connecticut, New York, New Jersey and Pennsylvania, and a large representation was from the cities of New York and Brooklyn, and cities in Long Island and Staten Island. A large number of photographers attending the New York State Convention of the Society of Professional Photographers of New York, also visited the Aristo School.

The school was under the management of Mr. F. L. Cornell who made the sittings and demonstrated the Aristo Lamp, and of Mr. Frank Haslett who demonstrated Aristo Paper, making prints from negatives made under the lamp, manipulating prints in their different necessary handling also making enlargements on the new Folmer & Schwing Enlarging Camera used in conjunction with the Aristo without the aid of Condensing Lenses. Talks on lighting, developing, demonstrating of the Aristo Paper, Bromide Enlargements, posing under the light were given with great success.

* * * *

The Wollensak Optical Co. tell about the Wollensak "Series A Portrait" Lenses in their advertisement this month. They have a number of other good things in the lens line, and we would suggest that it would not be amiss to get their free catalogue which will give you a better idea of these splendid lenses than we could in the limited space at our disposal. The address is 283 Central avenue, Rochester, N. Y.

* * * *

"Photographers Sit Up, Look and Listen."—This is the manner in which W. P. Buchanan, 1226 Arch Street, Philadelphia, Pa., in a little pamphlet just received, invites attention to his "Quality" Backgrounds. He also carries a full line of photographic supplies, and will be glad to hear from you when you are placing your next order.

* * * *

Seneca Cameras and the various photographic accessories manufactured by the Seneca Camera Manufacturing Co. are attractively presented in their 1907 catalogue, which reaches us in time for mention in this issue. No radical changes have been made in the line for this year. A View Outfit called the Camera City Studio and View Outfit, is now offered which is made on the same general line as the New Improved Seneca View, only stronger, with a wider range of swings, rising and falling front, and made much heavier. The entire line is made with black ebonized finish and nickel plated trimmings, adding much to the handsome finished appearance of the instrument. Get in line with this concern by writing for one of their catalogues before making your Spring purchases. It can be had for the asking. The address is Seneca Camera Mfg. Co., 700 Clinton avenue So. Rochester, N. Y.

* * * *

"The Story of the Century" is graphically and interestingly told in the 1907 catalogue of the Century Camera Co. The various special features which have won for these reliable cameras so many staunch admirers are simply and clearly explained. Prices and descriptive text for the various models should enable any one to select just the camera for his or her special needs. Some of these styles are Petite Centurys, Century Camera with Revolving Back, the Century Grand, Century Stereoscope, the Century View Camera, fitted with special lenses and shutters. The Crown Tripod, Century Color Screen, Crown Flash Lamp are each fully described. The scope of the Graflex shutter is also explained. A separate booklet treats of Cirkut Apparatus. Herein you get a wonderful amount of interesting matter pertaining to Panoramic Photography in a few minutes' reading. Have your dealer hand you copies of these two Century additions to photographic literature. Or else write The Century Camera Co., Rochester, N. Y., and they'll be glad to mail you copies.

* * * *

THE GUNDLACH- MANHATTAN OPTICAL CO. are out with their spring catalogue appropriately printed on green tinted paper. Herein you can obtain a succinct account of the "Korona" cameras. In the optical department the Turner-Reich lenses are fully described. If your local dealer does not carry these goods, the manufacturers are willing to receive your order and supply the goods direct from the factory on approbation. Drop a line to the Gundlach Manhattan Optical Company, 801 Clinton avenue, Rochester, N. Y., and then make your own selection. There are any number of good things to select from.

* * * *

SECOND ANNUAL ADVERTISING SHOW.—Madison Square Garden, New York, May 16 to 23.

The second annual Advertising Show at the Madison Square Garden, New York, will open on Thursday, May 16. The show will be continued for seven days, closing on Thursday of the following week.

The success of the first Advertising Show in New York last year, inaugurated by George F. Parker and J. L. Bieder, who have managed two similar shows in Chicago with marked success, has drawn great attention to the coming show in New York among manufacturers, With the contracts now in hand for space for this year's show, the Advertising Show of 1907 promises to be the most exhaustive exhibition of advertising features ever held.

Every year brings forward something new, strikingly novel, and attention-drawing, the conceptions of the most advanced makers in the manufacturing arts. For the coming Advertising Show these exhibits will eclipse those of any previous exhibition of the same kind. Advertising features do not alone occupy all the space for exhibition purposes, since the makers of every kind of utility will be represented in so far as it may apply to advancing general business through advertising.

To the general public the Advertising Show will have the same interest as any of the other large exhibitions that have been held in Madison Square Garden. Working machinery making advertising matter, displays of illuminated postal cards, bank note engraving, high art calendars, photo engraving, art lithography in its various phases, multi-printing processes, the latest inventions in quick changing and progressive electric advertising signs, window display announcements of all kinds, other devices that quickly arrest attention and are unique, small novelties worth preserving, are but a few of the hundreds of exhibits already arranged for and which the general public will find interesting.

The average attendance at all previous advertising shows conducted by Messrs. Parker and Bieder, the orginators of the Advertising Show, for a single week has been 250,000 which indicates the interest taken by every class in this kind of exhibition.

* * * *

HAMMER'S LITTLE BOOK ON NEGATIVE MAKING is a useful thing to have around the house. It is full of valuable hints and can be had for the asking. The address is given in their advertisement this issue.

* * * *

THE HARCOURT PLATINUM PAPERS we are advised by Curtis and Cameron are meeting with great favor. It would do you no harm to send for the price list and general directions and it may be just the paper you are looking for.

THE PHOTOGRAPHIC TIMES

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Copy for advertisements must be received at office one week in advance of the day of publication. Advertisers receive a copy of the journal free to certify the correctness of the insertion.

All literary contributions, correspondence, "Queries," etc., should be addressed to THE EDITOR; all advertising matter to the Advertising Manager.

THE PHOTOGRAPHIC TIMES PUBLISHING ASSOCIATION,
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Business Opportunities.

THE MOST BEAUTIFUL WOMAN IN CHICAGO.—We have the exclusive Post Card rights for publishing the pictures of Miss Della Carson, winner of The Chicago Tribune's $25,000.00 Beauty Contest, challenged by all leading papers who are running similar contests, as The Most Beautiful Woman in America. POST CARD COLLECTORS. Send ten cents for sample cards. Your collection is not complete without them. DEALERS AND AGENTS. Send 20 cents for large colored poster and genuine photograph of Miss Carson. Advance Studios, Woodlawn, Chicago.

WANTED—I have something new in a photo book; They show your prints to better advantage than any book heretofore obtainable. For detail, Address, Fred M. Dille 307 Continental Bldg: Denver, Colo.

WE WANT HELP.—EMPLOYMENT GIVEN to bright intelligent persons who have become expert in the use of Peerless Japanese Transparent Water Colors, "Self-Blending Photo Tints" send samples of your work. Japanese Water Color Co. 144 E. 34th St. New York.

HAVE YOUR LOCAL VIEWS MADE INTO
POST CARDS
AND SOUVENIR ALBUMS
FINEST AMERICAN MADE
The Albertype Co., Brooklyn, N. Y.

WANTED—A competent wet plate operator for copying large negatives. State experience when applying. Steady employment to right party. D. E. ABBOTT & Co., Huntington, W. Va.

ALL PHOTOGRAPHERS who are interested in up-to-date methods for building up business should send for my circular of specimen ads. and learn about my advertising service. M. F. SWIFT, THE PHOTO SPECIALIST, 9½ Richard St., Rochester, N. Y.

FOR SALE—Studio in New England, City of over 40,000 well equipped to 11 x 14 to be sold at a bargain. Doing a paying business with a good class of people. Chance of a life time for a good workman. Photo on application, Address, S. A. C. PHOTOGRAPHIC TIMES.

FOR RENT—A new and modern photograph gallery in a new building in New Kensington, Pa., a hustling growing city in center of 20,000 population. Practically no competition. An elegant opportunity to build up a thriving business. For particulars address, H. J. Logan, New Kensington, Pa.

FOR SALE—My elegant ground-floor studio, splendidly located in the very choicest part of Cleveland's residence district ; all conveniences; natural and artificial gas, electric light, steam heated ; chance of lifetime for good workman. If interested send for photos of studio and full particulars. J. Erickson, 721 Hough Ave., Cleveland, Ohio.

Eastman Kodak Company

ROCHESTER, N. Y., ***The Kodak City.***

MONSEN OF THE DESERT.

In the March number of the *Craftsman* is a most entertaining article on the Hopi and Navajo Indians, by Mr. Frederick Monsen, artist and lecturer. There is probably no living man who so well understands the simple and primitive people of the Arizona plains and cañons as Mr. Monsen. So fully is he in sympathy with these people, and so long and intimately has he been associated with them, that the *Craftsman* in introducing him to its readers has most happily given him the title, "Monsen of the Desert."

Mr. Monsen's Indian talks and Indian pictures are delightful, but it is in his experience as a portrayer of Indian life by means of the camera that the photographer is most interested. In telling of this he says:

"Naturally, in those days, all the pictures I took had to be posed and focused, as there was nothing to use but the tripod camera, the slow lens and the heavy glass plates. True, these were dry plates, so I was not hampered by the paraphernalia necessary to the use of wet plates, but as it was, the scope of my work was much limited, not only on account of the excessive weight of the instrument and plates, but also, and more particularly, because with this process it was impossible to avoid posing my subjects and making them keep still during a time exposure. When films were invented, I was, I believe, one of the first to use them in a professional way, and, although they were then by no means so reliable as they are now, they proved so indispensable to the kind of work I was doing, that I persisted in experimenting with them in spite of the fact that I failed repeatedly in my attempts to secure satisfactory results. In this way I gained my first actual experience and best practice in the instantaneous photographing of Indians, and when films were finally brought to such a degree of perfection that I could feel entirely secure in taking them out on long, difficult and expensive journeys, I began to get results such as I had never been able to achieve by the old method of using plates. A photographer who uses the large camera and plates the full size of the finished picture can seldom get either atmosphere, perspective or the freedom from consciousness that is so desirable when photographing Indians, that is, if one wishes for genuine individuality and convincing local color instead of more or less conventional or dramatic picturesqueness. The groups form themselves, melt away and change like cloud-shapes, and the best and most characteristic attitudes and groupings are absolutely impossible to obtain if one has to set up a tripod, adjust the camera, focus it, put in the plate, go over his group and pose each one until the general effect is just what he wants, and then take the picture. It may be an interesting and well-composed picture, but it is the photographer's idea that is expressed in it, not the artist's nor a phase of Indian life and character. By the use of the small cartridge films and the rapid action of the hand camera, one is able to snap-shot any number of charming, unconscious groups that show what the Indian is like in his daily life at home. * * * * * * *

"In addition to this convenience for working, which puts the hand camera almost on a level of a fountain pen carried for hasty notes, there are two other reasons why the small hand camera and cartridge films are so desirable for the Desert photographer. The first is purely practical, it reduces the weight of one's equipment for a reasonably long journey about ninety per cent., a matter worth considering when one travels in a rough and little known country. The second concerns the artistic quality of the large, finished picture. I have found that a direct print made from a large negative taken in the burning sunlight of Arizona or New Mexico is apt to be so sharp that it looks flat and hard, and seems to possess but little atmosphere or artistic feeling. By enlarging the picture from a small negative, I not only obtain a sense of perspective that gives some idea of the vast distances, but find myself able to produce a picture that, by its softness of outline and the effect of mellow, diffused light and deep, velvety shadows, conveys the feeling of all the sunshine and color that go to make up the characteristic atmosphere of the Desert."

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It isn't Kodak·film—
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Eastman Kodak Company

ROCHESTER, N. Y., *The Kodak City.*

CONCENTRATION.

The essence of the pleasure in Pocket Kodak picture making is concentration. You have so little to look after or handle that both mind and body are left free to enjoy the hunt for pictures. The entire instrument for making the pictures and the film to take the pictures on slip readily into a top coat pocket. Sufficient film for four dozen extra negatives may be readily stowed in another pocket.

To load or unload the Kodak you simply remove the back and slip in or out the film cartridge, no plate holders, no dark-room—convenient concentration.

In photographing against the light, do you have to fuss with special backings to avoid halation? No, the film is non-halation. Do you wish to preserve the fleecy clouds in your landscape?—the film is orthochromatic.

When you are through picture taking and are ready to develop, all you have to do is to open a tiny package and dissolve its contents in a certain amount of water—again concentration—and the dark-room—here indeed is concentration. The up-to-date dark-room for film development is so concentrated that *you* cannot get into it—neither need nor wish to. Daylight cannot harm you, so why should space be provided for you.

So you put your concentrated film and developer into your concentrated dark-room, and concentrate your mind on other things. The Kodak Tank Developer, will do the work better than you can for the necessary experience has been included in the concentration. In printing the picture, the same idea prevails—papers ready for use, solutions in concentrated form readily prepared—and in the home of the Kodak, hundreds of minds are concentrated on still further simplifying and perfecting picture making the Kodak way.

ALWAYS A CHANCE.

There is always a chance to secure just a little—sometimes a whole lot—better results from your favorite negatives. The percentage of good results increases with your familiarity with the process.

This will in a measure account for the immediate popularity of Royal Velox.

Entirely different results, with an old familiar process; the soft mellow tone of Royal Velox stock blends the contrasts of your picture in a marvelous manner, and when you add to this the richness of the Sepia tones when re-developed with Velox Re-Developer you have a wonderfully pliable medium of expression.

Royal Velox being supplied in both the "Regular" and "Special" grades does not limit you to negatives of any particular degree of contrast, and the texture of the stock, just slightly rough, serves to add life and brilliancy to the picture by breaking up the surface of both high lights and deepest shadows.

Try Royal Velox on a negative, that's just a bit too contrasty for most printing processes. Try Royal Velox on a landscape negative that seems to lack atmosphere and distance. Try Royal Velox with Sepia tones where you want warmth. In every instance the result will be pleasing and in many far beyond your expectations.

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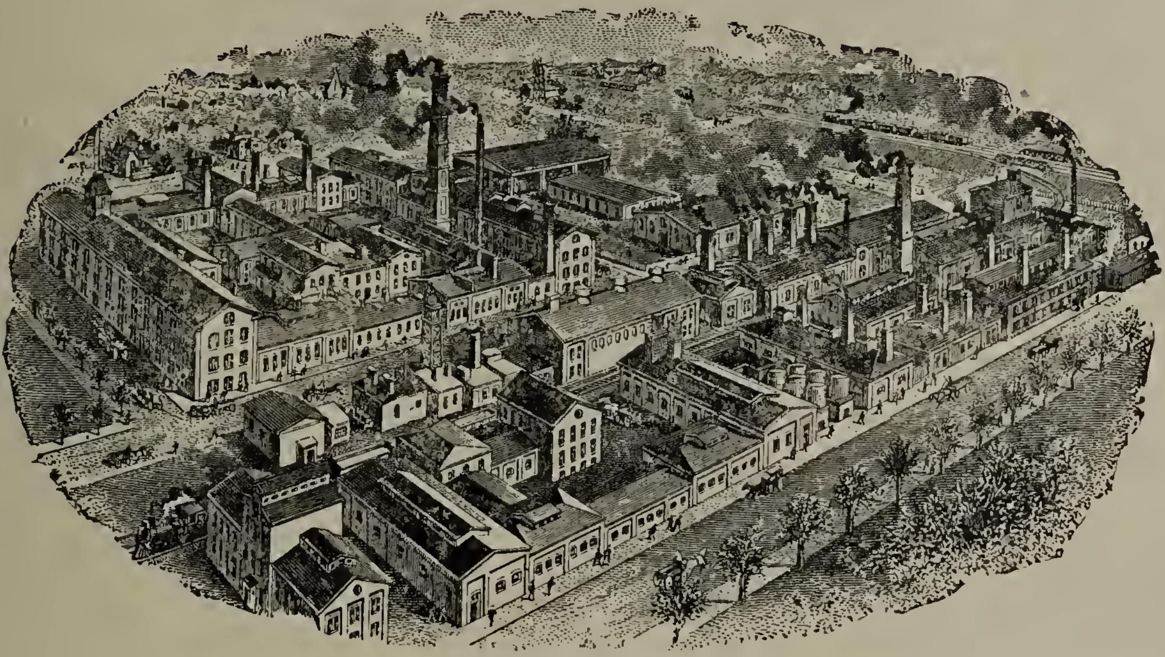

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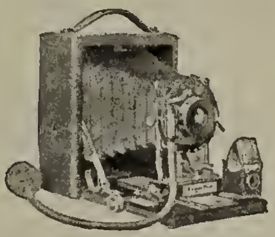

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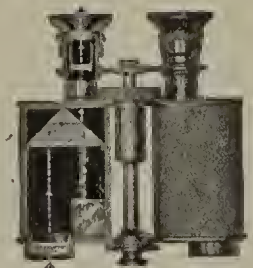

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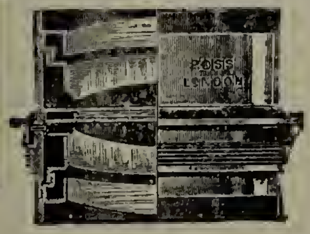

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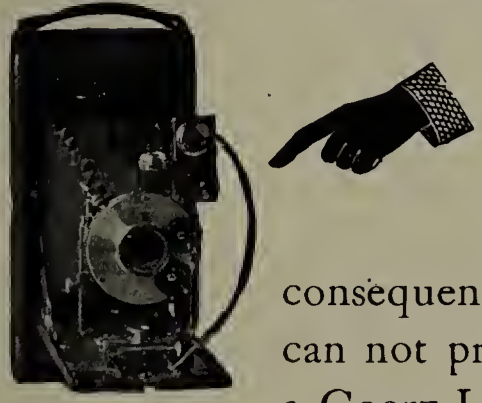

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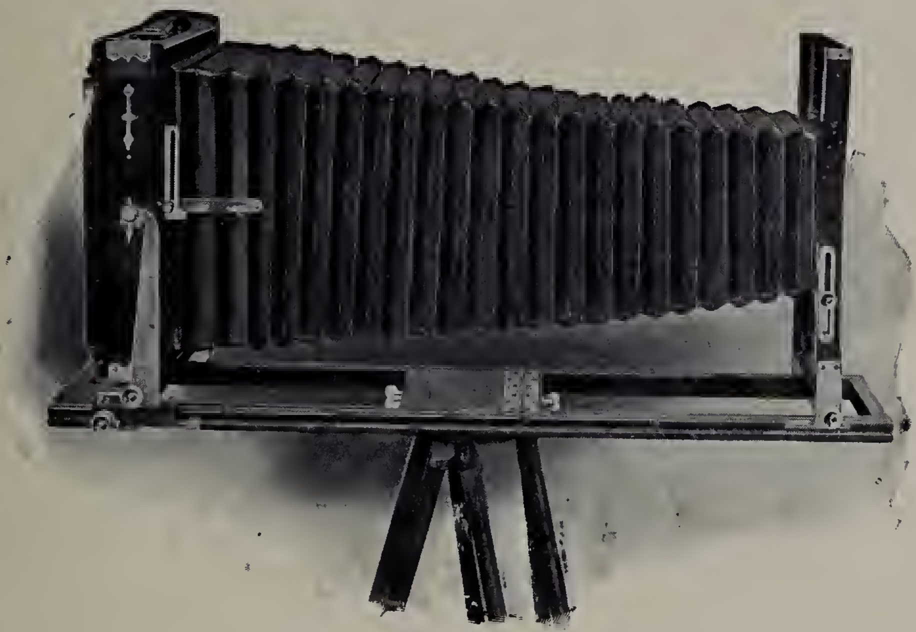

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